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Regulatory Guidance for Control of Volatile Organic Compound Emissions from 15 Categories of Stationary Sources

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This report provides guidance for regulation development in the form of sample regulations based heavily on the guidelines prepared by EPA OAQPS for 15 categories of stationary sources as well as existing Federal and State laws. In addition the report contains a compendium of existing regulations and test procedures. The sample regulations set forth in regulatory format definitions, emission limitations, equipment standards, exemptions, compliance schedules and testing methods and procedures.

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by

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Contract No. 68-02-2887

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SECTION 1

INTRODUCTION

The Clean Air Act Amendments of 1977 require each state in which there is any nonattainment area (as defined in subpart D of the Clean Air Act) to adopt and submit a revised State Implementation Plan (SIP) which meets the requirements of section 110(a)(2)(I) and subpart D of the Clean Air Act no later than January 1, 1979.

Specifically, EPA requires that the 1979 oxidant plan submissions for major urban areas should contain, as a minimum, legally enforceable regulations to reflect the application of Reasonably Available Control Technology (RACT) to those stationary sources for which the U.S. EPA's, OAQPS has published a guideline by January 1978, and provide for the adoption and submittal of additional legally enforceable procedures within 1 year after publication of subsequent guidelines.

The 15 stationary volatile organic compound source categories for which guidelines were available in January 1978 are:

- Surface Coating of Automobiles and Light-Duty Trucks
- Surface Coating of Cans
- Surface Coating of Metal Coils
- Surface Coating of Paper
- Surface Coating of Fabric Products
- Surface Coating of Metal Furniture
- Surface Coating of Large Appliances
- Surface Coating for Insulation of Magnet Wire
- Petroleum Liquids in Fixed-Roof Tanks
- Bulk Gasoline Plants
- Gasoline Loading Terminals
- Service Stations Stage I.
- Miscellaneous Refinery Sources
- Solvent Metal Cleaning
- Cutback Asphalt

In order to insure that the states develop and submit technically sound and legally enforceable regulations within a relatively tight time schedule, this report provides regulatory guidance in the form of model regulations for the 15 stationary volatile organic compound source categories and includes a compendium of information relating to the control and regulation of volatile organic compound emissions.

The model regulations begin with a number of provisions which are generally applicable. Some of these provisions will already have been promulgated by the states but are included here to emphasize their necessity.

The compliance schedules presented include dates which are felt to represent average time periods experienced for completion of the increments of progress. The increments of progress presented are the minimum that should be included in any compliance schedule.

The regulations and test procedures were developed directly from the 11 OAQPS guideline documents which were available in January 1978. The phrasing was extracted from both the guideline documents and existing state and federal regulations. Copies of existing regulations which were used are included in Appendix A.

The bibliography lists recent articles and reports that will be useful to the reader who must become more familiar with the source categories or is faced with a unique source configuration.

SECTION 2

MODEL REGULATIONS FOR VOLATILE ORGANIC COMPOUND RACT CATEGORIES

The Model Regulations for Volatile Organic Compound RACT Categories are presented below in a format similar to the Federal Register requirements. Although the Federal Register does not require indenting of subparagraphs, it was felt that presenting the regulations in this manner would make their organization more understandable.

The regulations are grouped into four major sections and each major section is subsequently divided into individual regulations. It is important to note that the section numbers used (i.e., XX.9211) are arbitrary and are for illustration purposes only.

§XX.9100 GENERAL PROVISIONS

§XX.9101 Definitions. For the purpose of these Regulations, the following definitions apply:

(a) "Approved" means approved by the designated air pollution control official.

(b) "Capture system" means the equipment (including hoods, ducts, fans, etc.) used to contain, capture, or transport a pollutant to a control device.

(c) "Coating applicator" means an apparatus used to apply a surface coating.

(d) "Coating line" means one or more apparatus or operations which include a coating applicator, flash-off area, and oven wherein a surface coating is applied, dried, and/or cured.

(e) "Construction" means commencement of onsite fabrication, erection, or installation of an emission source, air pollution control equipment, or a facility.

(f) "Control device" means equipment (incinerator, adsorber, or the like) used to destroy or remove air pollutant(s) prior to discharge to the ambient air.

(g) "Continuous vapor control system" means a vapor control system that treats vapors displaced from tanks during filling on a demand basis without intermediate accumulation.

(h) "Day" means a 24-hour period beginning at midnight.

(j) "Director" means the Executive Director and Chief Executive Officer of the Agency.

(k) "Emission" means the release or discharge, whether directly or indirectly, of any air pollutant in to the ambient air from any source.

(m) "Facility" means any building, structure, installation, activity, or combination thereof which contains a stationary source of air contaminants.

(n) "Flashoff area" means the space between the application area and the oven.

(o) "Hydrocarbon" means any organic compound of carbon and hydrogen only.

(p) "Incinerator" means a combustion apparatus designed for high temperature operation in which solid, semisolid, liquid, or gaseous combustible wastes are ignited and burned efficiently and from which the solid and gaseous residues contain little or no combustible material.

(q) "Intermittent vapor control system" means a vapor control system that employs an intermediate vapor holder to accumulate vapors displaced from tanks during filling. The control device treats the accumulated vapors only during automatically controlled cycles.

(r) "Loading rack" means an aggregation or combination of gasoline loading equipment arranged so that all loading outlets in the combination can be connected to a tank truck or trailer parked in a specified loading space.

(s) "Organic material" means a chemical compound of carbon excluding carbon monoxide, carbon dioxide, carbonic aicd, metallic carbides or carbonates, and ammonium carbonate.

(t) "Oven" means a chamber within which heat is used to bake, cure, polymerize, and/or dry a surface coating.

(u) "Owner or operator" means any person who owns, leases, controls, operates or supervises a facility, an emission source, or air pollution control equipment.

(w) "Person" means any individual, partnership, co-partnership, firm, company, corporation, association, joint stock company, trust, estate, political subdivision, or any other legal entity, or their legal representative, agent or assigns.

(y) "Prime coat" means the first film of coating applied in a two-coat operation.

(z) "Reasonably available control technology" (also denoted as RACT) means the lowest emission limit that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility. It may require technology that has been applied to similar, but not necessarily identical, source categories.

(aa) "Reid vapor pressure" means the absolute vapor pressure of volatile crude oil and volatile nonviscous petroleum liquids except liquified petroleum gases as determined by American Society for Testing and Materials, Part 17, 1973, D-323-72 (Reapproved 1977).

(bb) "Shutdown" means the cessation of operation of a facility or emission control equipment.

(cc) "Solvent" means organic materials which are liquid at standard conditions and which are used as dissolvers, viscosity reducers, or cleaning agents.

(dd) "Standard conditions" means a temperature of $20^{o}C$ ($68^{o}F$) and pressure of 760 millimeters of mercury (29.92 inches of mercury).

(ee) "Startup" means the setting in operation of a source or emission control equipment

(ff) "Stationary source" means any article, machine, process equipment, or other contrivance from which air pollutants emanate or are emitted, either directly or indirectly, from a fixed location.

(gg) "Topcoat" means the final film of coating applied in a multiple coat operation.

(hh) "True vapor pressure" means the equilibrium partial pressure exerted by a petroleum liquid as determined in accordance with methods described in American Petroleum Institute Bulletin 2517, "Evaporation Loss from Floating Roof Tanks," 1962.

(jj) "Vapor collection system" means a vapor transport system which uses direct displacement by the liquid loaded to force vapors from the tank into a vapor control system.

(kk) "Vapor control system" means a system that prevents release to the atmosphere of at least 90 percent by weight of organic compounds in the vapors displaced from a tank during the transfer of gasoline.

(mm) "Volatile organic compound" (also denoted as VOC) means any compound of carbon that has a vapor pressure greater than 0.1 millimeters of mercury at standard conditions excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate.

§XX.9102 Applicability

(a) After December 31, 1978, these Regulations apply throughout the entire State of (Ohio, Indiana, Illinois, Michigan, Minnesota, and Wisconsin), in accordance with the schedules in §XX.9300, to all sources of volatile organic compounds.

(b) These Regulations will not apply to;

(1) sources whose emissions of volatile organic compounds are not more than 6.8 kilograms (15 pounds) in any 1 day, nor more than 1.4 kilograms (3 pounds) in any 1 hour, provided the emission rates are determined and certified before March 1, 1979 in a manner approved by the Director.

(2) sources used exclusively for chemical or physical analysis or determination of product quality and commercial acceptance provided;

(i) the operation of the source is not an integral part of the production process; and,

(ii) the emissions from the source do not exceed 363 kilograms (800 pounds) in any calendar month; and,

(iii) the exemption is approved in writing by the Director.

(c) For the purposes of these Regulations the following will not be considered volatile organic compounds;

(1) Methane

(2) Ethane

(3) 1,1,1-Trichloroethane (Methyl Chloroform)

(4) Trichlorotrifluoroethane (Freon 113)

§XX.9103 Required and Prohibited Acts.

(a) After December 31, 1978, no owner or operator of a source of volatile organic compounds may operate, cause, allow or permit the operation of the source, unless;

(1) the operation and emissions of the source are at all times in conformance with §XX.9200, except as allowed under §XX.9105; and,

(2) a Standard Operating Procedure, which includes a detailed description of process and/or emission control equipment startup, operating, and shutdown procedures for minimization of volatile organic compound release, has been submitted to and approved by the Director; and,

(3) a Standard Maintenance Procedure, which provides for the operation of the volatile organic compound source in conformance with paragraphs (a) (1) and (a) (2) of this section, has been submitted to and approved by the Director.

§XX.9104 Recordkeeping, Reporting, Monitoring.

(a) The owner or operator of any volatile organic compound emission source or control equipment shall maintain, as a minimum: records detailing all activities relating to any Compliance Schedule under §XX.9300; records detailing all Malfunctions under §XX.9105; records detailing startups and shutdowns under §XX.9103; and records of all Testing conducted under §XX.9400; plus records of all Monitoring conducted under paragraphs (c) (1) and (c) (2) of this section.

(b) The owner or operator of any volatile organic compound emission source or control equipment shall submit to the Director, as a minimum, annual reports detailing the nature, specific sources, and total annual quantities of all volatile organic compound emissions. However, the Director may require more frequent reports where necessary to accomplish the purposes of these Regulations.

(c) The owner or operator of any volatile organic compound emission source or control equipment shall;

(1) install, operate, and maintain process and/or control equipment monitoring instruments or procedures as necessary to comply with paragraphs (a) and (b) of this section; and,

(2) maintain, in writing, data and/or reports relating to monitoring instruments or procedures which will, upon review, document the compliance status of the volatile organic compound emission source or control equipment to the satisfaction of the Director.

(d) Copies of all records and reports under paragraphs (a), (b), and (c) of this section shall be retained by the owner or operator for a minimum of 4 years after the date on which the record was made or the report submitted and may not thereafter be discarded, destroyed or removed without the express written approval of the Director.

(e) Copies of all records and reports under this section shall immediately be made available to the Director, upon verbal or written request, at any reasonable time.

§XX.9105 Malfunctions, Breakdowns, Upsets.

(a) Emissions in excess of these Regulations which are temporary and result solely from a sudden and unavoidable breakdown, malfunction or upset of process or emission control equipment, or sudden and unavoidable upset of operation will not be considered a violation of these Regulations provided:

(1) the owner or operator notifies the Director of any such occurrence within 1 hour of the occurrence; and,

(2) the owner or operator demonstrates to the Director that the suggested period of time for correction is as expeditious as practicable; and,

(3) breakdown or upset is determined by the Director to be unavoidable and not the result of negligence; and,

(4) within 5 days after the beginning of the occurrence, a written report is submitted to the Director which includes the cause and nature of the event, estimated quantity of volatile organic compounds emitted, time of emission and steps taken to control the emission and to prevent recurrence; and,

(5) the Director considers the suggested period of time for correction to be reasonable and necessary; and,

(6) the Director is immediately notified when corrective measures have been accomplished.

§XX.9106 Petition for Alternative Controls.

(a) If the owner or operator of any source of volatile organic compounds can demonstrate that compliance with §XX.9200 regulations would be technologically infeasible he may petition the Director to allow the use of alternative operational and/or equipment controls for the reduction of volatile organic compound emissions. Petition must be made for each source within a given facility. The petition must be submitted in writing to the Director before March 1, 1979, and must contain;

(1) the name and address of the company and the name and telephone number of a company officer over whose signature the petition is submitted; and,

(2) a description of all operations conducted at the location to which the petition applies and the purpose that the volatile organic compound emitting equipment serves within the operations; and,

(3) reference to the specific operational and/or equipment controls under §XX.9200 for which alternative operational and/or equipment controls are proposed; and,

(4) a detailed description of the proposed alternative operational and/or equipment controls, the magnitude of volatile organic compound emission reduction which will be achieved, and the quantity and composition of volatile organic compounds which will be emitted if the alternative operational and/or equipment controls are instituted; and,

(5) a plan, which will be instituted in addition to the proposed alternative operational and/or equipment controls, to reduce volatile organic compound emissions from other source operations, not required under §XX.9200, such that aggregate volatile organic compound emissions from the facility will in no case be greater through application of the alternative control than would be permitted through conformance with §XX.9200; and,

(6) a schedule for the installation and/or institution of the alternative operational and/or equipment controls in conformance with §XX.9300; and,

(7) certification that emissions of all other air contaminants from the subject facility are in compliance with all applicable local, state and federal laws and regulations.

(b) The Director may approve a Petition for Alternative Control if;

(1) the petition is submitted in accordance with paragraph (a) of this section; and,

(2) the Director determines that the petitioner cannot comply with §XX.9200 because of technological infeasibility (considering costs); and,

(3) all other air contaminant emissions from the subject facility are in compliance with, or under a schedule for compliance as expeditiously as practicable with, all applicable local, state, and federal regulations; and,

(4) the petition contains a schedule for achieving and maintaining reduction of volatile organic compound emissions to the maximum extent feasible and as expeditiously as practicable; and,

(5) a nuisance condition will not result from operation of the source as proposed in the Petition; and,

(6) the aggregate volatile organic compound emissions from the facility are not more than would result from compliance with §XX.9200.

§XX.9107 Circumvention.

(a) No owner or operator subject to these Regulations may build, erect, install, or use any article, machine, equipment, process, or method, the use of which conceals an emission which would otherwise constitute a violation of an applicable Regulation.

(b) Paragraph (a) of this section includes, but is not limited to, the use of gaseous dilutants to achieve compliance and the piecemeal carrying out of an operation to avoid coverage by a Regulation that applies only to operations larger than a specified size.

§XX.9200 PROVISIONS FOR SPECIFIC PROCESSES

§XX.9201 Disposal of Volatile Organic Compounds.

(a) After December 31, 1978, no person may cause, allow, or permit the disposal of more than 5.7 liters (1.5 gallons) of any volatile organic compounds, or of any materials containing more than 5.7 liters (1.5 gallons) of any volatile organic compounds, in any 1 day in a manner that would permit their evaporation into the atmosphere.

(b) Paragraph (a) of this section includes, but is not limited to, the disposal of volatile organic compounds which must be removed from volatile organic compound control devices so as to maintain the control devices at their required operating efficiency.

§XX.9202 Automobile and Light Duty Truck Manufacturing.

(a) For the purpose of this section, the following definitions apply:

(1) "Application area" means the area where the coating is applied by dipping or spraying.

(2) "Manufacturing plant" means a facility where auto or light-duty truck bodies are manufactured and/or finished for eventual inclusion into a finished product ready for sale to vehicle dealers. Customizers, body shops and other repainters are not part of this definition.

(3) "Automobile" means all passenger cars or passenger car derivatives capable of seating 12 or fewer passengers.

(4) "Flashoff area" means the space between the application area and the oven.

(5) "Light-duty trucks" means any motor vehicles rated at 3864 kilograms (8500 pounds) gross weight or less which are designed primarily for purpose of transportation or are derivatives of such vehicles.

(b) Notwithstanding §XX.9102, after December 31, 1978 this section will apply, in accordance with §XX.9300, to the application area(s), flashoff area(s), and oven(s) of automotive and light-duty truck manufacturing plants involved in prime, topcoat and final repair coating operations.

(c) This section will not apply to sources exempted under §XX.9102(b).

(d) (1) Notwithstanding §XX.9103(a), no owner or operator of an automotive or light-duty truck manufacturing plant subject to this section may cause, allow or permit the discharge into the atmosphere of any volatile organic compounds in excess of;

(i) 0.23 kilograms per liter of coating (1.9 pounds per gallon), excluding water, delivered to the applicator from prime application, flashoff area and oven operations.

(ii) 0.34 kilograms per liter of coating (2.8 pounds per gallon), excluding water, delivered to the applicator from topcoat application, flashoff area and oven operations.

(iii) 0.58 kilograms per liter of coating (4.8 pounds per gallon), excluding water, delivered to the applicator from final repair application, flashoff area and oven operations.

(2) The emission limits under paragraph (d) (1) of this section shall be achieved by;

(i) the application of low solvent content coating technology; or,

(ii) incineration, provided that 90 percent of the nonmethane volatile organic compounds (VOC measured as total combustible carbon) which enter the incinerator are oxidized to carbon dioxide and water; or,

(iii) a system demonstrated to have control efficiency equivalent to or greater than provided under paragraph (d)(2)(i) or (d)(2)(ii) of this section and approved by the Director.

(3) The design, operation, and efficiency of any capture system used in conjunction with paragraphs (d) (2) (ii) and (d) (2) (iii) of this section shall be certified in writing by the owner or operator and approved by the Director.

§XX.9203 Can Coating.

(a) For the purpose of this section, the following definitions apply:

(1) "End sealing compound" means a synthetic rubber compound which is coated on to can ends and which functions as a gasket when the end is assembled on the can.

(2) "Exterior base coating" means a coating applied to the exterior of a can to provide exterior protection to the metal and to provide background for the lithographic or printing operation.

(3) "Interior base coating" means a coating applied by roller coater or spray to the interior of a can to provide a protective lining between the can metal and product.

(4) "Interior body spray" means a coating sprayed on the interior of the can body to provide a protective film between the product and the can.

(5) "Overvarnish" means a coating applied directly over ink to reduce the coefficient of friction, to provide gloss and to protect the finish against abrasion and corrosion.

(6) "Three-piece can side-seam spray" means a coating sprayed on the exterior and interior of a welded, cemented or soldered seam to protect the exposed metal.

(7) "Two-piece can exterior end coating" means a coating applied by roller coating or spraying to the exterior end of a can to provide protection to the metal.

(b) Notwithstanding §XX.9102, after December 31, 1978 this section will apply, in accordance with §XX.9300, to coating applicator(s) and oven(s) of sheet, can or end coating lines involved in sheet basecoat (exterior and interior) and overvarnish; two-piece can exterior (basecoat and overvarnish); two and three-piece can interior body spray; two-piece can exterior end (spray or roll coat); three-piece can side-seam spray and end sealing compound operations.

(c) This section will not apply to sources exempted under §XX.9102(b).

(d) (1) Notwithstanding §XX.9103(a), no owner or operator of a can coating line subject to this section may cause, allow or permit the discharge into the atmosphere of any volatile organic compounds in excess of;

(i) 0.34 kilograms per liter of coating (2.8 pounds per gallon), excluding water, delivered to the coating applicator from sheet basecoat (exterior and interior) and overvarnish or two-piece can exterior (basecoat and overvarnish) operations.

(ii) 0.51 kilograms per liter of coating (4.2 pounds per gallon), excluding water, delivered to the coating applicator from two- and three-piece can interior body spray and two-piece can exterior end (spray or roll coat) operations.

(iii) 0.66 kilograms per liter of coating (5.5 pounds per gallon), excluding water, delivered to the coating applicator from three-piece can side-seam spray operations.

(iv) 0.44 kilograms per liter of coating (3.7 pounds per gallon), excluding water, delivered to the coating applicator from end sealing compound operations.

(2) The emission limits under paragraph (d) (1) of this section shall be achieved by;

(i) the application of low solvent content coating technology; or,

(ii) incineration, provided that 90 percent of the nonmethane volatile organic compounds (VOC measured as total combustible carbon) which enter the incinerator are oxidized to carbon dioxide and water; or,

(iii) a system demonstrated to have control efficiency equivalent to or greater than provided under paragraph (d)(2)(i) or (d)(2)(ii) of this section and approved by the Director.

(3) The design, operation, and efficiency of any capture system used in conjunction with paragraphs (d) (2) (ii) and (d) (2) (iii) of this section shall be certified in writing by the owner or operator and approved by the Director.

§XX.9204 Coil Coating.

(a) For the purpose of this section, the following definitions apply:

(1) "Coil coating" means the coating of any flat metal sheet or strip that comes in rolls or coils.

(2) "Quench area" means a chamber where the hot metal exiting the oven is cooled by either a spray of water or a blast of air followed by water cooling.

(b) Notwithstanding §XX.9102, after December 31, 1978 this section will apply, in accordance with §XX.9300, to the coating applicator(s), oven(s) and quench area(s) of coil coating lines involved in prime and top coat or single coat operations.

(c) This section will not apply to sources exempted under §XX.9102(b).

(d) (1) Notwithstanding §XX.9103(a), no owner or operator of a coil coating line subject to this section may cause, allow or permit the discharge into the atmosphere of any volatile organic compounds in excess of 0.31 kilograms per liter of coating (2.6 pounds per gallon), excluding water, delivered to the coating applicator from prime and topcoat or single coat operations.

(2) The emission limit under paragraph (d) (1) of this section shall be achieved by;

(i) the application of low solvent content coating technology; or,

(ii) incineration, provided that 90 percent of the nonmethane volatile organic compounds (VOC measured as total combustible carbon) which enter the incinerator are oxidized to carbon dioxide and water; or,

(iii) a system demonstrated to have control efficiency equivalent to or greater than provided under paragraph (d)(2)(i) or (d)(2)(ii) of this section and approved by the Director.

(3) The design, operation, and efficiency of any capture system used in conjunction with paragraphs (d) (2) (ii) and (d) (2) (iii) of this section shall be certified in writing by the owner or operator and approved by the Director.

§XX.9205 Paper Coating.

(a) For the purpose of this section, the following definitions apply:

(1) "Knife coating" means the application of a coating material to a substrate by means of drawing the substrate beneath a knife that spreads the coating evenly over the full width of the substrate.

(2) "Paper coating" means coatings put on paper and pressure sensitive tapes regardless of substrate. Related web coating processes on plastic film and decorative coatings on metal foil are included in this definition.

(3) "Roll coating" means the application of a coating material to a substrate by means of hard rubber or steel rolls.

(4) "Rotogravure coating" means the application of a coating material to a substrate by means of a roll coating technique in which the pattern to be applied is etched on the coating roll. The coating material is picked up in these recessed areas and is transferred to the substrate.

(b) Notwithstanding §XX.9102, after December 31, 1978 this section will apply, in accordance with §XX.9300, to roll, knife or rotogravure coater(s) and drying oven(s) of paper coating lines.

(c) This section will not apply to sources exempted under §XX.9102(b).

(d) (1) Notwithstanding §XX.9103(a), no owner or operator of a paper coating line subject to this section may cause, allow or permit the discharge into the atmosphere of any volatile organic compounds in excess of 0.35 kilograms per liter of coating (2.9 pounds per gallon), excluding water, delivered to the coating applicator from a paper coating line.

(2) The emission limit under paragraph (d) (1) of this section shall be achieved by;

(i) the application of low solvent content coating technology; or,

(ii) incineration, provided that 90 percent of the nonmethane volatile organic compounds (VOC measured as total combustible carbon) which enter the incinerator are oxidized to carbon dioxide and water; or,

(iii) a system demonstrated to have control efficiency equivalent to or greater than provided under paragraph (d)(2)(i) or (d)(2)(ii) of this section and approved by the Director.

(3) The design, operation, and efficiency of any capture system used in conjunction with paragraph (d) (2) (ii) and (d) (2) (iii) of this section shall be certified in writing by the owner or operator and approved by the Director.

§XX.9206 Fabric and Vinyl Coating.

(a) For the purpose of this section, the following definitions apply:

(1) "Fabric coating" means the coating of a textile substrate with a knife, roll or rotogravure coater to impart properties that are not initially present, such as strength, stability, water or acid repellancy, or appearance.

(2) "Knife coating" means the application of a coating material to a substrate by means of drawing the substrate beneath a knife that spreads the coating evenly over the full width of the substrate.

(3) "Roll coating" means the application of a coating material to a substrate by means of hard rubber or steel rolls.

(4) "Rotogravure coating" means the application of a coating material to a substrate by means of a roll coating technique in which the pattern to be applied is etched on the coating roll. The coating material is picked up in these recessed areas and is transferred to the substrate.

(5) "Vinyl coating" means applying a decorative or protective topcoat, or printing on vinyl coated fabric or vinyl sheets.

(b) Notwithstanding §XX.9102, after December 31, 1978 this section will apply, in accordance with §XX.9300, to roll, knife or rotogravure coater(s) and drying oven(s) of fabric and vinyl coating lines.

(c) This section will not apply to sources exempted under §XX.9102(b).

(d) (1) Notwithstanding §XX.9103(a), no owner or operator of a fabric coating line or a vinyl coating line subject to this section may cause, allow or permit the discharge into the atmosphere of any volatile organic compounds in excess of;

(i) 0.35 kilograms per liter of coating (2.9 pounds per gallon), excluding water, delivered to the coating applicator from a fabric coating line.

(ii) 0.45 kilograms per liter of coating (3.8 pounds per gallon), excluding water, delivered to the coating applicator from a vinyl coating line.

(2) The emission limits under paragraph (d) (1) of this section shall be achieved by;

(i) the application of low solvent content coating technology; or,

(ii) incineration, provided that 90 percent of the nonmethane volatile organic compounds (VOC measured as total combustible carbon) which enter the incinerator are oxidized to carbon dioxide and water; or,

(iii) a system demonstrated to have control efficiency equivalent to or greater than provided under paragraph (d)(2)(i) or (d)(2)(ii) of this section and approved by the Director.

(3) The design, operation, and efficiency of any capture system used in conjunction with paragraph (d) (2) (ii) and (d) (2) (iii) of this section shall be certified in writing by the owner or operator and approved by the Director.

§XX.9207 Metal Furniture Coating.

(a) For the purpose of this section, the following definitions apply:

(1) "Application area" means the area where the coating is applied by spraying, dipping or flowcoating techniques.

(2) "Metal furniture coating" means the surface coating of any furniture made of metal or any metal part which will be assembled with other metal, wood, fabric, plastic or glass parts to form a furniture piece.

(b) Notwithstanding §XX.9102, after December 31, 1978 this section will apply, in accordance with §XX.9300, to the application area(s), flashoff area(s), and oven(s) of metal furniture coating lines involved in prime and topcoat or single coating operations.

(c) This section will not apply to sources exempted under §XX.9102(b).

(d) (1) Notwithstanding §XX.9103(a), no owner or operator of a metal furniture coating line subject to this section may cause, allow or permit the discharge into the atmosphere of any volatile organic compounds in excess of 0.36 kilograms per liter of coating (3.0 pounds per gallon), excluding water, delivered to the coating applicator from prime and topcoat or single coat operations.

(2) The emission limit under paragraph (d) (1) of this section shall be achieved by;

(i) the application of low solvent content coating technology; or,

(ii) incineration, provided that 90 percent of the nonmethane volatile organic compounds (VOC measured as total combustible carbon) which enter the incinerator are oxidized to carbon dioxide and water; or,

(iii) a system demonstrated to have control efficiency equivalent to or greater than provided under paragraph (d)(2)(i) or (d)(2)(ii) of this section and approved by the Director.

(3) The design, operation, and efficiency of any capture system used in conjunction with paragraphs (d) (2) (ii) and (d) (2) (iii) of this section shall be certified in writing by the owner or operator and approved by the Director.

§XX.9208 Surface Coating of Large Appliances.

(a) For the purpose of this section, the following definitions apply:

(1) "Application area" means the area where the coating is applied by spraying, dipping or flowcoating techniques.

(2) "Single coat" means a single film of coating applied directly to the metal substrate omitting the primer application.

(3) "Large appliances" means doors, cases, lids, panels and interior support parts of residential and commercial washers, dryers, ranges, refrigerators, freezers, water heaters, dishwashers, trash compactors, air conditioners and other similar products.

(b) Notwithstanding §XX.9102, after December 31, 1978 this section will apply, in accordance with §XX.9300, to application area(s), flashoff area(s), and oven(s) of large appliance coating lines involved in prime, single or topcoat coating operations.

(c) This section will not apply to;

(1) sources exempted under §XX.9102(b); or,

(2) the use of quick-drying lacquers for repair of scratches and nicks that occur during assembly, provided that the volume of coating does not exceed 0.95 liters (1 quart) in any one 8-hour period.

(d) (1) Notwithstanding §XX.9103(a), no owner or operator of a large appliance coating line subject to this section may cause, allow or permit the discharge into the atmosphere of any volatile organic compounds in excess of 0.34 kilograms per liter of coating (2.8 pounds per gallon), excluding water, delivered to the coating applicator from prime, single or topcoat coating operations.

(2) The emission limit under paragraph (d) (1) of this section shall be achieved by;

(i) the application of low solvent content coating technology; or,

(ii) incineration, provided that 90 percent of the nonmethane volatile organic compounds (VOC measured as total combustible carbon) which enter the incinerator are oxidized to carbon dioxide and water; or,

(iii) a system demonstrated to have control efficiency equivalent to or greater than provided under paragraph (d)(2)(i) or (d)(2)(ii) of this section and approved by the Director.

(3) The design, operation, and efficiency of any capture system used in conjunction with paragraphs (d) (2) (ii) and (d) (2) (iii) of this section shall be certified in writing by the owner or operator and approved by the Director.

§XX.9209 Magnet Wire Coating.

(a) For the purpose of this section, the following definition applies:

(1) "Magnet wire coating" means the process of applying a coating of electrically insulating varnish or enamel to aluminum or copper wire for use in electrical machinery.

(b) Notwithstanding §XX.9102, after December 31, 1978 this section will apply, in accordance with §XX.9300, to the oven(s) of magnet wire coating operations.

(c) This section will not apply to sources exempted under §XX.9102(b).

(d) (1) Notwithstanding §XX.9103(a), no owner or operator of a magnet wire coating oven subject to this section may cause, allow or permit the discharge into the atmosphere of any volatile organic compounds in excess of 0.20 kilograms per liter of coating (1.7 pounds per gallon), excluding water, delivered to the coating applicator from magnet wire coating operations.

(2) The emission limit under paragraph (d) (1) of this section shall be achieved by;

(i) the application of low solvent content coating technology; or,

(ii) incineration, provided that 90 percent of the nonmethane volatile organic compounds (VOC measured as total combustible carbon) which enter the incinerator are oxidized to carbon dioxide and water; or,

(iii) a system demonstrated to have control efficiency equivalent to or greater than provided under paragraph (d)(2)(i) or (d)(2)(ii) of this section and approved by the Director.

(e) The design, operation, and efficiency of any capture system used in conjunction with paragraphs (d) (2) (ii) and (d) (2) (iii) of this section shall be certified in writing by the owner or operator and approved by the Director.

§XX.9210 Petroleum Liquid Storage.

(a) For the purpose of this section, the following definitions apply:

(1) "Condensate" means hydrocarbon liquid separated from natural gas which condenses due to changes in the temperature and/or pressure and remains liquid at standard conditions.

(2) "Crude oil" means a naturally occurring mixture which consists of hydrocarbons and/or sulfur, nitrogen and/or oxygen derivatives of hydrocarbons and which is a liquid at standard conditions.

(3) "Custody transfer" means the transfer of produced crude oil and/or condensate, after processing and/or treating in the producing operations, from storage tanks or automatic transfer facilities to pipelines or any other forms of transportation.

(4) "External floating roof" means a storage vessel cover in an open top tank consisting of a double deck or pontoon single deck which rests upon and is supported by the petroleum liquid being contained and is equipped with a closure seal or seals to close the space between the roof edge and tank shell.

(5) "Internal floating roof" means a cover or roof in a fixed roof tank which rests upon or is floated upon the petroleum liquid being contained, and is equipped with a closure seal or seals to close the space between the roof edge and tank shell.

(6) "Petroleum liquids" means crude oil, condensate, and any finished or intermediate products manufactured or extracted in a petroleum refinery.

(7) "Petroleum refinery" means any facility engaged in producing gasoline, kerosene, distillate fuel oils, residual fuel oils, lubricants, or other products through distillation of crude oils, or through redistillation, cracking, extraction, or reforming of unfinished petroleum derivatives.

(8) "True vapor pressure" means the equilibrium partial pressure exerted by a petroleum liquid as determined in accordance with methods described in American Petroleum Institute Bulletin 2517, "Evaporation Loss From Floating Roof Tanks," 1962.

(b) Notwithstanding §XX.9102, after December 31, 1978 this section will apply, in accordance with §XX.9300, to all fixed roof storage vessels with capacities greater than 150,000 liters (39,000 gallons) containing volatile petroleum liquids whose true vapor pressure is greater than 10.5 kilo Pascals (1.52 psia).

(c) This section will not apply to volatile petroleum liquid storage vessels;

(1) equipped with external floating roofs before January 1, 1979; or,

(2) having capacities less than 1,600,000 liters (416,000 gallons) used to store produced crude oil and condensate prior to lease custody transfer.

(d) Except as provided under paragraph (c) of this section, no owner or operator of an effected source under paragraph (b) of this section shall permit the use of such source unless;

(1) the source has been retrofitted with an internal floating roof equipped with a closure seal, or seals, to close the space between the roof edge and tank wall; or,

(2) the source has been retrofitted with equally effective alternative control, approved by the Director; and,

(3) the source is maintained such that there are no visible holes, tears, or other openings in the seal or any seal fabric or materials; and,

(4) all openings, except stub drains are equipped with covers, lids, or seals such that;

(i) the cover, lid, or seal is in the closed position at all times except when in actual use; and,

(ii) automatic bleeder vents are closed at all times except when the roof is floated off or landed on the roof leg supports; and,

(iii) rim vents, if provided, are set to open when the roof is being floated off the roof leg supports or at the manufacturer's recommended setting; and,

(5) routine inspections are conducted through roof hatches once per month; and,

(6) a complete inspection of cover and seal is conducted whenever the tank is emptied for nonoperational reasons or once per year; and,

(7) records are maintained in accordance with §XX.9104 that shall include;

(i) reports of the results of inspections conducted under paragraphs (d)(5) and (d)(6) of this section; and,

(ii) a record of the average monthly storage temperatures and true vapor pressures of volatile petroleum liquids stored; and,

(iii) records of the throughput quantities and types of volatile petroleum liquids for each storage vessel.

§XX.9211 Bulk Gasoline Plants.

(a) For the purpose of this section, the following definitions apply:

(1) "Bottom filling" means the filling of a tank truck or stationary storage tank through an opening that is flush with the tank bottom.

(2) "Bulk gasoline plant" means a gasoline storage and distribution facility with an average throughput of less than 76,000 liters (20,000 gallons) which receives gasoline from bulk terminals by trailer transport, stores it in tanks, and subsequently dispenses it via account trucks to local farms, businesses, and service stations.

(3) "Bulk gasoline terminal" means a gasoline storage facility which receives gasoline from refineries primarily by pipeline, ship, or barge, and delivers gasoline to bulk gasoline plants or to commercial or retail accounts primarily by tank truck; and has a daily throughput of more than 76,000 liters (20,000 gallons) of gasoline.

(4) "Gasoline" means any petroleum distillate having a Reid vapor pressure of 27.6 kPa (4 pounds) or greater.

(5) "Splash filling" means the filling of a tank truck or stationary storage tank through a pipe or hose whose discharge opening is above the surface level of the liquid in the tank being filled.

(6) "Submerged filling" means the filling of a tank truck or stationary tank through a pipe or hose whose discharge opening is entirely submerged when the pipe normally used to withdraw liquid from the tank can no longer withdraw any liquid.

(7) "Vapor balance system" means a combination of pipes or hoses which create a closed system between the vapor spaces of an unloading tank and a receiving tank such that vapors displaced from the receiving tank are transferred to the tank being unloaded.

(b) Notwithstanding §XX.9102, after December 31, 1978 this section will apply, in accordance with §XX.9300, to the unloading, loading, and storage facilities of all bulk gasoline plants and all tank trucks or trailers delivering or receiving gasoline at bulk gasoline plants.

(c) This section will not apply to;

(1) stationary storage tanks of less than 2,000 liters (528 gallons) capacity notwithstanding §XX.9107; or,

(2) sources exempted under §XX.9102(b).

(d) Except as provided under paragraph (c) of this section, no owner or operator of a bulk gasoline plant may permit stationary storage tanks to load or unload gasoline unless each tank is equipped with a vapor balance system as described under paragraph (g) of this section and approved by the Director; and,

(1) each tank is equipped with a submerged fill pipe, approved by the Director; or,

(2) each tank is equipped with a fill line whose discharge opening is flush with the bottom of the tank.

(e) Except as provided under paragraph (c) of this section, no owner or operator of a bulk gasoline plant, tank truck or trailer may permit the loading or unloading of tank trucks or trailers at a bulk gasoline plant unless each tank truck or trailer is equipped with a vapor balance system as described under paragraph (g) of this section and approved by the Director; and,

(1) equipment is available at the bulk gasoline plant to provide for the submerged filling of each tank truck or trailer; or,

(2) each tank truck or trailer is equipped for bottom filling.

(f) Notwithstanding §XX.9103(a), no owner or operator of a bulk gasoline plant, tank truck or trailer may permit the transfer of gasoline between tank truck or trailer and stationary storage tank unless;

(1) the transfer is conducted in accordance with paragraphs (d) and (e) of this section; and,

(2) the vapor balance system is in good working order and is connected and operating; and,

(3) tank truck or trailer hatches are closed at all times during loading operations; and,

(4) there are no leaks in the tank trucks' or trailers' pressure/vacuum relief valves and hatch covers, nor the truck tanks or storage tanks or associated vapor and liquid lines during loading or unloading; and,

(5) the pressure relief valves on storage vessels and tank trucks or trailers are set to release at no less than 4.8 kPa (0.7 psi) or the highest possible pressure (in accordance with state or local fire codes, or the National Fire Prevention Association guidelines).

(g) Vapor balance systems required under paragraph (d) and (e) of this section shall consist of the following major components;

(1) a vapor space connection on the stationary storage tank equipped with fittings which are vapor tight and will automatically and immediately close upon disconnection so as to prevent release of organic material; and,

(2) a connecting pipe or hose equipped with fittings which are vapor tight and will automatically and immediately close upon disconnection so as to prevent release of organic material; and,

(3) a vapor space connection on the tank truck or trailer equipped with fittings which are vapor tight and will automatically and immediately close upon disconnection so as to prevent release of organic material.

(h) Notwithstanding §XX.9201, no owner or operator of a bulk gasoline plant may permit gasoline to be spilled, discarded in sewers, stored in open containers or handled in any other manner that would result in evaporation.

§XX.9212 Bulk Gasoline Terminals.

(a) For the purpose of this section, the following definitions apply:

(1) "Bulk gasoline terminal" means a gasoline storage facility which receives gasoline from refineries primarily by pipeline, ship, or barge, and delivers gasoline to bulk gasoline plants or to commercial or retail accounts primarily by tank truck; and has a daily throughput of more than 76,000 liters (20,000 gallons) of gasoline.

(2) "Gasoline" means a petroleum distillate having a Reid vapor pressure of 27.6 kPa (4 pounds) or greater.

(b) Notwithstanding §XX.9102, after December 31, 1978 this section will apply, in accordance with §XX.9300, to bulk gasoline terminals and the appurtenant equipment necessary to load the tank truck or trailer compartments.

(c) No person may load gasoline into any tank trucks or trailers from any bulk gasoline terminal unless;

(1) the bulk gasoline terminal is equipped with a vapor control system, capable of complying with paragraph (d) of this section, properly installed, in good working order, in operation and consisting of one of the following;

(i) an adsorber or condensation system which processes and recovers at least 90 percent by weight of all vapors and gases from the equipment being controlled; or,

(ii) a vapor collection system which directs all vapors to a fuel gas system; or,

(iii) a control system, demonstrated to have control efficiency equivalent to or greater than paragraphs (c) (1) (i) or (c) (1) (ii) of this section and approved by the Director; and,

(2) all displaced vapors and gases are vented only to the vapor control system; and,

(3) a means is provided to prevent liquid drainage from the loading device when it is not in use or to accomplish complete drainage before the loading device is disconnected; and,

(4) all loading and vapor lines are equipped with fittings which make vapor-tight connections and which close automatically when disconnected.

(d) Sources effected under paragraph (c) (1) may not allow mass emissions of volatile organic compounds from control equipment to exceed 80 milligrams per liter (4.7 grains per gallon) of gasoline loaded.

(e) Sources effected under paragraph (b) may not;

(1) allow gasoline to be discarded in sewers or stored in open containers or handled in any manner that would result in evaporation; nor,

(2) allow the pressure in the vapor collection system to exceed the tank truck or trailer pressure relief settings.

§XX.9213 Gasoline Service Stations Stage I.

(a) For the purpose of this section, the following definitions apply:

(1) "Gasoline" means a petroleum distillate having a Reid vapor pressure of 27.6 kPa (4 pounds) or greater.

(2) "Delivery Vessel" means tank trucks or trailers equipped with a storage tank and used for the transport of gasoline from sources of supply to stationary storage tanks of gasoline dispensing facilities.

(3) "Submerged Fill Pipe" means any fill pipe with a discharge opening which is entirely submerged when the pipe normally used to withdraw liquid from the tank can no longer withdraw any liquid.

(4) "Owner" means any person who has legal or equitable title to the gasoline storage tank at a facility.

(5) "Operator" means any person who leases, operates, controls or supervises a facility at which gasoline is dispersed.

(6) "Gasoline Dispensing Facility" means any site where gasoline is dispersed to motor vehicle gasoline tanks from stationary storage tanks.

(b) Notwithstanding §XX.9102, after December 31, 1978 this section will apply, in accordance with §XX.9300, to all gasoline dispensing facilities.

(c) This section will not apply to;

(1) transfers made to storage tanks of gasoline dispensing facilities equipped with floating roofs or their equivalent which have been approved by the Director.

(2) stationary gasoline storage containers of less than 2,085 liters (550 gallons) capacity used exclusively for the fueling of implements of husbandry, provided the containers are equipped with submerged fill pipes.

(d) Except as provided under paragraph (c) of this section, no owner or operator may transfer or cause or allow the transfer of gasoline from any delivery vessel into any stationary storage tank described under paragraphs (d) (1) and (d) (2) of this section, unless the tank is equipped with a submerged fill pipe and the vapors displaced from the storage tank during filling are processed by a vapor control system in accordance with paragraph (e) of this section;

(1) any stationary storage tank located at a gasoline dispensing facility, with a capacity of 7,580 liters (2,000 gallons) or more, which is in place before January 1, 1979; and,

(2) any stationary storage tank located at a gasoline dispensing facility, with a capacity of 948 liters (250 gallons) or more, which is installed after December 31, 1978.

(e) The vapor control system required by paragraph (d) of this section shall include one or more of the following;

(1) a vapor-tight line from the storage tank to the delivery vessel and a system that will ensure the vapor line is connected before gasoline can be transferred into the tank; or,

(2) a refrigeration - condensation system or equivalent designed to recover at least 90 percent by weight of the organic compounds in the displaced vapor; or,

(3) a system demonstrated to have control efficiency equivalent to or greater than provided under paragraph (e) (1) or (e) (2) of this section and approved by the Director.

(f) The vapor-laden delivery vessel shall be subject to the following conditions;

(1) the delivery vessel must be designed and maintained to be vapor tight at all times; and,

(2) the vapor-laden delivery vessel may be refilled only at;

(i) bulk gasoline plants complying with §XX.9211; or,

(ii) bulk gasoline terminals complying with §XX.9212.

(g) Each owner of a gasoline storage tank covered by paragraphs (b) and (d) of this section shall;

(1) purchase and install all necessary control systems and make all necessary process modifications in accordance with paragraphs (d), (e), and (f) of this section; and,

(2) in accordance with §XX.9103 and §XX.9105, provide instructions to the operator of the gasoline dispensing facility describing necessary maintenance operations and procedures for prompt notification of the owner in case of any malfunctions of the control system; and,

(3) repair, replace or modify any worn out or malfunctioning component or element of design and keep records, in accordance with §XX.9104, of the repair, replacement or modification of any component or element of design of the control system.

(h) Each operator of a gasoline dispensing facility covered by (b) and (d) of this section shall;

(1) maintain and operate the control system in accordance with the specifications and the operating and maintenance procedures specified by the owner; and,

(2) promptly notify the owner of the control system of any scheduled maintenance or malfunction requiring replacement or repair of major components of the system; and,

(3) maintain records, in accordance with §XX.9104, of all maintenance performed by the operator and of all notifications to the owner of any scheduled maintenance or malfunction requiring replacement or repair of major components of the system and the action taken by the owner. Such records shall at a minimum include;

(i) the scheduled date for maintenance or the date a malfunction was detected; and,

(ii) the date the need for maintenance or malfunction of major system components was reported to the owner; and,

(iii) the date the maintenance was performed or the malfunction corrected by either the operator or the owner; and,

(4) maintain gauges, meters, or other specified testing devices in proper working order.

§XX.9214 Petroleum Refinery Sources.

(a) For the purpose of this section, the following definitions apply:

(1) "Accumulator" means the reservoir of a condensing unit receiving the condensate from the condenser.

(2) "Condenser" means any heat transfer device used to liquefy vapors by removing their latent heats of vaporization. Such devices include, but are not limited to, shell and tube, coil, surface, or contact condensers.

(3) "Firebox" means the chamber or compartment of a boiler or furnace in which materials are burned but does not mean the combustion chamber of an incinerator.

(4) "Forebays" mean the primary sections of a wastewater separator.

(5) "Hot well" means the reservoir of a condensing unit receiving the warm condensate from the condenser.

(6) "Petroleum refinery" means any facility engaged in producing gasoline, kerosene, distillate fuel oils, residual fuel oils, lubricants, or other products through distillation, cracking, extraction, or reforming of unfinished petroleum derivatives.

(7) "Refinery fuel gas" means any gas which is generated by a petroleum refinery process unit and which is combusted, including any gaseous mixture of natural gas and fuel gas.

(8) "Turnaround" means the procedure of shutting a refinery unit down after a run to do necessary maintenance and repair work and putting the unit back on stream.

(9) "Vacuum producing system" means any reciprocating, rotary, or centrifugal blower or compressor, or any jet ejector or device that takes suction from a pressure below atmospheric and discharges against atmospheric pressure.

(10) "Vapor recovery system" means a system that prevents release to the atmosphere of no less than 90 percent by weight of organic compounds emitted during the operation of any transfer, storage, or process equipment.

(11) "Wastewater (oil/water) separator" means any device or piece of equipment which utilizes the difference in density between oil and water to remove oil and associated chemicals from water, or any device, such as a flocculation tank, clarifier, etc., which removes petroleum derived compounds from waste water.

(b) Notwithstanding §XX.9102, after December 31, 1978 this section will apply, in accordance with §XX.9300, to vacuum producing systems, wastewater separators, and process unit turnarounds at petroleum refining sources.

(c) (1) The owner or operator of any vacuum producing systems at a petroleum refinery may not permit the emission of any noncondensable volatile organic compounds from the condensers, hot wells or accumulators of the system.

(2) The emission limit under paragraph (c) (1) of this section shall be achieved by;

(i) piping the noncondensable vapors to a firebox or incinerator; or,

(ii) compressing the vapors and adding them to the refinery fuel gas.

(d) The owner or operator of any wastewater (oil/water) separators at a petroleum refinery shall;

(1) provide covers and seals approved by the Director, on all separators and forebays; and,

(2) equip all openings in covers, separators, and forebays with lids or seals such that the lids or seals are in the closed position at all times except when in actual use.

(e) Notwithstanding §XX.9300, before April 1, 1979 the owner or operator of a petroleum refinery shall develop and submit to the Director for approval a detailed procedure for minimization of volatile organic compound emissions during process unit turnaround. As a minimum, the procedure shall provide for;

(1) depressurization venting of the process unit or vessel to a vapor recovery system, flare or firebox; and,

(2) no emission of volatile organic compounds from a process unit or vessel until its internal pressure is 136 kilo Pascals (19.7 psia) or less; and,

(3) recordkeeping of the following items in accordance with §XX.9104;

(i) every date that each process unit or vessel is shut down; and,

(ii) the approximate vessel volatile organic compound concentration when the volatile organic compounds were first discharged to the atmosphere; and,

(iii) the approximate total quantity of volatile organic compounds emitted to the atmosphere.

§XX.9215 Solvent Metal Cleaning.

(a) For the purpose of this section, the following definitions apply:

(1) "Cold cleaning" means the batch process of cleaning and removing soils from metal surfaces by spraying, brushing, flushing or immersion while maintaining the solvent below its boiling point. Wipe cleaning is not included in this definition.

(2) "Conveyorized degreasing" means the continuous process of cleaning and removing soils from metal surfaces by operating with either cold or vaporized solvents.

(3) "Freeboard height" means the distance from the top of the vapor zone to the top of the degreaser tank.

(4) "Freeboard ratio" means the freeboard height divided by the width of the degreaser.

(5) "Open top vapor degreasing" means the batch process of cleaning and removing soils from metal surfaces by condensing hot solvent vapor on the colder metal parts.

(6) "Solvent metal cleaning" means the process of cleaning soils from metal surfaces by cold cleaning or open top vapor degreasing or conveyorized degreasing.

(b) Notwithstanding §XX.9102, after December 31, 1978 this section will apply, in accordance with §XX.9300, to cold cleaning, open top vapor degreasing and conveyorized degreasing operations.

(c) The provisions of this section shall apply with the following exceptions;

(1) open top vapor degreasers with an open area smaller than 1 square meter (10.8 square feet) shall be exempt from paragraphs (e) (3) (ii) and (e) (3) (iv) of this section,

(2) conveyorized degreasers with an air/vapor interface smaller than 2.0 square meters (21.6 square feet) shall be exempt from paragraph (f) (2) of this section,

(3) sources exempted under §XX.9102(b).

(d) Except as provided under paragraph (c) of this section, the owner or operator of a cold cleaning facility shall;

(1) equip the cleaner with a cover and the cover shall be so designed that it can be easily operated with one hand; if,

(i) the solvent volatility is greater than 2 kilo Pascals (15 millimeters of mercury or 0.3 pounds per square inch) measured at 38°C (100°F); or,

(ii) the solvent is agitated; or,

(iii) the solvent is heated; and,

(2) equip the cleaner with a facility for draining cleaned parts and the drainage facility shall be constructed internally so that parts are enclosed under the cover while draining if the solvent volatility is greater than 4.3 kilo Pascals (32 millimeters of mercury or 0.6 pounds per square inch) measured at 38°C (100°F), except that the drainage facility may be external for applications where an internal type cannot fit into the cleaning system; and,

(3) install one of the following control devices if the solvent volatility is greater than 4.3 kilo Pascals (33 millimeters of mercury or 0.6 pounds per square inch) measured at 38°C (100°F), or if the solvent is heated above 50°C (120°F);

(i) freeboard that gives a freeboard ratio greater than or equal to 0.7; or,

(ii) water cover (solvent must be insoluble in and heavier than water); or,

(iii) other systems of equivalent control, such as refrigerated chiller or carbon adsorption, approved by the Director; and,

(4) provide a permanent, conspicuous lable, summarizing the operating requirements; and,

(5) store waste solvent only in covered containers and not dispose of waste solvent or transfer it to another party, such that greater than 20 percent of the waste solvent (by weight) can evaporate into the atmosphere; and,

(6) close the cover whenever parts are not being handled in the cleaner; and,

(7) drain the cleaned parts for at least 15 seconds or until dripping ceases; and,

(8) if used, supply a solvent spray that is a solid fluid stream (not a fine, atomized or shower type spray) at a pressure which does not cause excessive splashing.

(e) Except as provided under paragraph (c) of this section, the owner or operator of an open top vapor degreaser shall;

(1) equip the vapor degreaser with a cover that can be opened and closed easily without disturbing the vapor zone; and,

(2) provide the following safety switches;

(i) a condenser flow switch and thermostat which shut off the pump heat if the condenser coolant is either not circulating or too warm; and,

(ii) a spray safety switch which shuts off the spray pump if the vapor level drops more than 10 centimeters (4 inches); and,

(3) install one of the following control devices;

(i) powered cover, if the freeboard ratio is greater than or equal to 0.75, and if the degreaser opening is greater than 1 square meter (10 square feet); or,

(ii) refrigerated chiller; or,

(iii) enclosed design (cover or door opens only when the dry part is actually entering or exiting the degreaser); or,

(iv) carbon adsorption system, with ventilation greater than or equal to 15 cubic meters per minute per square meter (50 cubic feet per minute per square foot) of air/vapor area (when cover is open), and exhausting less than 25 parts per million of solvent averaged over one complete adsorption cycle; or,

(v) a control system, demonstrated to have control efficiency equivalent to or greater than any of the above, and approved by the Director; and,

(4) keep the cover closed at all times except when processing work loads through the degreaser; and,

(5) minimize solvent carryout by;

 (i) racking parts to allow complete drainage; and,

 (ii) moving parts in and out of the degreaser at less than 3.3 meters per second (11 feet per minute); and,

 (iii) holding the parts in the vapor zone at least 30 seconds or until condensation ceases; and,

 (iv) tipping out any pools of solvent on the cleaned parts before removal from the vapor zone; and,

 (v) allowing parts to dry within the degreaser for at least 15 seconds or until visually dry; and,

(6) not degrease porous or absorbent materials, such as cloth, leather, wood or rope; and,

(7) not occupy more than half of the degreaser's open top area with a workload; and,

(8) not load the degreaser to the point where the vapor level would drop more than 10 centimeters (4 inches) when the workload is removed from the vapor zone; and,

(9) always spray below the vapor level; and,

(10) repair solvent leaks immediately, or shutdown the degreaser; and,

(11) store waste solvent only in covered containers and not dispose of waste solvent or transfer it to another party, such that greater than 20 percent of the waste solvent (by weight) can evaporate into the atmosphere; and,

(12) not operate the cleaner so as to allow water to be visually detectable in solvent exiting the water separator; and,

(13) not use ventilation fans near the degreaser opening, nor provide exhaust ventilation exceeding 20 cubic meters per minute per square meter (65 cubic feet per minute per square foot) of degreaser open area, unless necessary to meet OSHA requirements; and,

(14) provide a permanent, conspicuous label, summarizing the operating procedures of paragraphs (e) (4) through (e) (12) of this section.

(f) Except as provided under paragraph (c) of this section, the owner or operator of a conveyorized degreaser shall;

(1) not use workplace fans near the degreaser opening, nor provide exhaust ventilation exceeding 20 cubic meters per minute per square meter (65 cubic feet per minute per square foot) of degreaser opening, unless necessary to meet OSHA requirements; and,

(2) install one of the following control devices;

(i) refrigerated chiller; or,

(ii) carbon adsorption system, with ventilation greater than or equal to 15 cubic meters per minute per square meter (50 cubic feet per minute per square foot) of air/vapor area (when downtime covers are open), and exhausting less than 25 parts per million of solvent by volume averaged over a complete adsorption cycle; or,

(iii) a system, demonstrated to have a control efficiency equivalent to or greater than paragraph (f)(2)(i) or (f)(2)(ii) of this section, and approved by the Director; and,

(3) equip the cleaner with equipment, such as a drying tunnel or rotating (tumbling) basket, sufficient to prevent cleaned parts from carrying out solvent liquid or vapor; and,

(4) provide the following safety switches;

(i) a condenser flow switch and thermostat which shut off the pump heat if the condenser coolant is either not circulating or too warm; and,

(ii) a spray safety switch which shuts off the spray pump or the conveyor if the vapor level drops more than 10 centimeters (4 inches); and,

(iii) a vapor level control thermostat which shuts off the pump heat when the vapor level rises too high; and,

(5) minimize openings during operation so that entrances and exits will silhouette workloads with an average clearance between the parts and the edge of the degreaser opening of less than 10 centimeters (4 inches) or less than 10 percent of the width of the opening; and,

(6) provide downtime covers for closing off the entrance and exit during shutdown hours; and,

(7) minimize carryout emissions by;

(i) racking parts for best drainage; and,

(ii) maintaining the vertical conveyor speed at less than 3.3 meters per minute (11 feet per minute); and,

(8) store waste solvent only in covered containers and not dispose of waste solvent or transfer it to another party, such that greater than 20 percent of the waste solvent (by weight) can evaporate into the atmosphere; and,

(9) repair solvent leaks immediately, or shut down the degreaser; and,

(10) not operate the cleaner so as to allow water to be visually detectable in solvent exiting the water separator; and,

(11) place downtime covers over entrances and exits of conveyorized degreasers immediately after the conveyors and exhausts are shut down and not remove them until just before start-up.

§XX.9216 Cutback Asphalt.

(a) For the purpose of this section, the following definitions apply:

(1) "Asphalt" means a dark-brown to black cementitious material (solid, semisolid, or liquid in consistency) in which the predominating constituents are bitumens which occur in nature as such or which are obtained as residue in refining petroleum.

(2) "Cutback Asphalt" means asphalt cement which has been liquefied by blending with petroleum solvents (diluents). Upon exposure to atmospheric conditions the diluents evaporate, leaving the asphalt cement to perform its function.

(3) "Emulsified Asphalt" means an emulsion of asphalt cement and water which contains a small amount of an emulsifying agent; a heterogeneous system containing two normally immiscible phases (asphalt and water) in which the water forms the continuous phase of the emulsion, and minute globules of asphalt form the discontinuous phase.

(4) "Penetrating Prime Coat" means an application of low-viscosity liquid asphalt to an absorbent surface. It is used to prepare an untreated base for an asphalt surface. The prime penetrates the base and plugs the voids, hardens the top, and helps bind it to the overlying asphalt course. It also reduces the necessity of maintaining an untreated base course prior to placing the asphalt pavement.

(b) Notwithstanding §XX.9102, after December 31, 1978 this section will apply to the manufacture and use of cutback asphalts.

(c) (1) No person may cause, allow or permit the manufacture, mixing, storage, use or application of cutback asphalts without approval of the Director as provided in paragraph (c)(2) of this section.

(2) The Director may approve the manufacture, mixing, storage, use or application of cutback asphalts where;

(i) long-life stockpile storage is necessary; or,

(ii) the use or application at ambient temperatures less than 10°C (50°F) is necessary; or,

(iii) the cutback asphalt is to be used solely as a penetrating prime coat.

§XX.9300 COMPLIANCE SCHEDULES

§XX.9301 Process and Emission Control Equipment Installations.

(a) Except as provided under §XX.9304 or §XX.9305, the owner or operator of a volatile organic compound emission source proposing to install and operate volatile organic compound emission control equipment and/or replacement process equipment to comply with §XX.9200 shall adhere to the increments of progress contained in the following schedule;

(1) Final plans for the emission control system and/or process equipment must be submitted before July 1, 1979.

(2) Contracts for the emission control systems and/or process equipment must be awarded or orders must be issued for purchase of component parts to accomplish emission control before January 1, 1980.

(3) Initiation of on-site construction or installation of the emission control and/or process equipment must begin before March 1, 1980.

(4) On-site construction or installation of the emission control and/or process equipment must be completed before September 1, 1980.

(5) Final compliance, determined in accordance with §XX.9400, shall be achieved before October 1, 1980.

(6) Any owner or operator of a stationary emission source subject to the compliance schedule of this section shall certify to the Director within 5 days after the deadline for each increment of progress, whether the required increment of progress has been met.

§XX.9302 Low Solvent Content Coating.

(a) Except as provided under §XX.9304 or §XX.9305 or under paragraph (b) of this section, the owner or operator of a volatile organic compound emission source proposing to employ low solvent content coating technology to comply with §XX.9200 shall adhere to the increments of progress contained in the following schedule;

(1) Final plans for the application of low solvent content coating technology must be submitted before July 1, 1979.

(2) Research and development of low solvent content coating must be completed before January 1, 1980.

(3) Evaluation of product quality and commercial acceptance must be completed before July 1, 1980.

(4) Purchase orders must be issued for low solvent content coatings and process modifications before September 1, 1980.

(5) Initiation of process modifications must begin before November 1, 1980.

(6) Process modifications must be completed and use of low solvent content coatings must begin before April 1, 1981.

(7) Final compliance, determined in accordance with §XX.9400, shall be achieved before May 1, 1981.

(8) Any owner or operator of a stationary source subject to the compliance schedule of this section shall certify to the Director within 5 days after the deadline for each increment of progress, whether the required increment of progress has been met.

(b) Where the Director determines that low solvent content coating technology has been sufficiently researched and developed for a particular application, the owner or operator of a volatile organic compound emission source proposing to comply with §XX.9200 through application of low solvent content coatings shall adhere to the increments of progress contained in the following schedule;

(1) Final plans for the application of low solvent content coating technology must be submitted before July 1, 1979.

(2) Evaluation of product quality and commercial acceptance must be completed before January 1, 1980.

(3) Purchase orders must be issued for low solvent content coatings and process modifications before March 1, 1980.

(4) Initiation of process modifications must begin before May 1, 1980.

(5) Process modifications must be completed and use of low solvent content coatings must begin before October 1, 1980.

(6) Final compliance, determined in accordance with §XX.9400, shall be achieved before November 1, 1980.

(7) Any owner or operator of a stationary source subject to the compliance schedule of this section shall certify to the Director within 5 days after the deadline for each increment of progress, whether the required increment of progress has been met.

§XX.9303 Equipment Modification.

(a) Except as provided under §XX.9304 or §XX.9305, the owner or operator of a volatile organic compound emission source proposing to comply with §XX.9200 by modification of existing processing equipment shall adhere to the increments of progress contained in the following schedule;

(1) **Final plans for process modification must be submitted before July 1, 1979.**

(2) **Contracts for process modifications must be awarded or orders must be issued for the purchase of component parts to accomplish process modifications before September 1, 1979.**

(3) Initiation of on-site construction or installation of process modifications must begin before December 1, 1979.

(4) On-site construction or installation of process modifications must be completed before April 30, 1980.

(5) Final compliance, determined in accordance with §XX.9400, shall be achieved before May 31, 1980.

(6) Any owner or operator of a stationary source subject to the compliance schedule of this section shall certify to the Director within 5 days after the deadline for each increment of progress, whether the required increment of progress has been met.

§XX.9304 Alternate Compliance Schedules.

(a) Nothing in §XX.9300 shall prevent the Director from promulgating a separate schedule for any source if he finds that the application of a compliance schedule in §XX.9301 through §XX.9303 would be technologically infeasible.

(b) Nothing in §XX.9300 shall prevent the owner or operator of a volatile organic compound source from submitting to the Director a proposed alternative compliance schedule provided;

(1) the proposed alternative compliance schedule is submitted before March 1, 1979, and;

(2) the final control plans for achieving compliance with §XX.9200 are submitted simultaneously, and;

(3) the alternative compliance schedule contains the same increments of progress as the schedule for which it is proposed, and;

(4) sufficient documentation and certification from appropriate suppliers, contractors, manufacturers, or fabricators is submitted by the owner or operator of the volatile organic compound source to justify the dates proposed for the increments of progress.

(c) All alternative compliance schedules proposed or promulgated under this section shall provide for compliance of the volatile organic compound emission source with §XX.9200 as expeditiously as practicable but not later than December 31, 1982.

(d) Any schedule approved under this section may be revoked at any time if the source does not meet the increments of progress stipulated.

§XX.9305 Exception. Sections §XX.9301 through §XX.9304 will not apply to sources which are in compliance with §XX.9200 before January 1, 1979 and have determined and certified compliance to the satisfaction of the Director before March 1, 1979.

§XX.9400 TEST METHODS AND PROCEDURES

§XX.9401 General Provisions.

(a) The owner or operator of any volatile organic compound source required to comply with §XX.9200 shall, at his own expense, demonstrate compliance by the methods of §XX.9400 or an alternative method approved by the Director. All tests shall be made by, or under the direction of, a person qualified by training and/or experience in the field of air pollution testing.

(b) No volatile organic compound emissions compliance testing will be allowed, nor the results accepted, unless prior notification has been supplied to the Director as required under paragraph (c) and (d) of this section and the Director has granted approval.

(c) Any person proposing to conduct a volatile organic compound emissions test shall notify the Director, in the manner set forth under paragraph (d) of this section, of the intent to test not less than 30 days before the proposed initiation of the tests so the Director may at his option observe the test.

(d) Any person notifying the Director of a proposed volatile organic compound emissions test shall include as part of notification the following minimum information;

(1) a statement indicating the purpose of the proposed test and the applicable subsection of §XX.9200; and,

(2) a detailed description of the facility to be tested; and,

(3) a detailed description of the test procedures, equipment, and sampling sites; and,

(4) a timetable, setting forth the dates on which;

(i) the testing will be conducted; and,

(ii) preliminary test results will be reported (not later than 15 days after sample collection); and,

(iii) the final test report will be submitted (not later than 30 days after completion of on-site sampling); and,

(5) proposed corrective actions should the tests show noncompliance.

(e) For compliance determination, the owner or operator of any volatile organic compound emissions source shall be responsible for providing;

(1) sampling ports, pipes, lines, or appurtenances for the collection of samples and data required by the test procedure; and,

(2) safe access to the sample and data collection locations; and,

(3) light, electricity, and other utilities required for sample and data collection.

§XX.9402 Determination of Volatile Content of Surface Coatings.

(a) This method applies, in accordance with §XX.9401, to paint, varnish, lacquer, and surface coatings which are air-dried or force-dried.

(b) This method does not apply to any coating system requiring a special curing process such as;

(1) exposure to temperatures in excess of 110°C (230°F) to promote thermal cross-linking; or,

(2) exposure to ultraviolet light to promote cross-linking.

(c) For the purposes of this method, the applicable surface coatings are divided into three classes. They are:

(1) Class I: General Solvent-Type Paints. This class includes white linseed oil outside paint, white soya and phthalic alkyd enamel, white linseed o-phthalic alkyd enamel, red lead primer, zinc chromate primer, flat white inside enamel, white epoxy enamel, white vinyl toluene modified alkyd, white amino modified baking enamel, and other solvent-type paints not included in Class II.

(2) Class II: Varnishes and Lacquers. This class includes clear and pigmented lacquers and varnishes.

(3) Class III: Water Thinned Paints. This class includes emulsion or latex paints and colored enamels.

(d) For the purposes of this method, a representative sample of the surface coating shall be obtained at the point of delivery to the coater or any other point in the process that the Director approves.

(e) The volatile organic content of the sample shall be determined as follows:

(1) Assign the coating to one of the three classes in paragraph (c) of this section. Assign any coating not clearly belonging to Class II or III to Class I.

(2) Determine the density D_m (in grams/cubic centimeter) of the paint, varnish, lacquer, or related product according to the procedure outlined in ASTM D 1475-60, Standard Method of Test for Density of Paint, Varnish, Lacquer, and Related Products. Then, depending on the class of the coating, use one of the following specified procedures to determine the volatile content;

(i) Class I. Use the procedure in ASTM D 2369-73, Standard Method of Test for Volatile Content of Paints.

(A) Record the following information:

W_1 = Weight of dish and sample, grams

W_2 = Weight of dish and sample after heating, grams

S = Sample weight, grams

(B) Compute the volatile matter content C_v (in grams/liter of paint) as follows:

$$C_v = \frac{(W_1 - W_2)(D_m)(10^3)}{S}$$

(C) To convert grams/liter to pounds/gallon, multiply C_v by 8.3455×10^{-3}.

(ii) Class II. Use the procedure in ASTM D 1644-59 Method A, Standard Methods of Test for Nonvolatile Content of Varnishes (Do not use Method B).

(A) Record the following information:

A = Weight of dish, grams

B = Weight of sample used, grams

C = Weight of dish and contents after heating, grams.

(B) Compute the volatile matter content C_v (in grams/liter) as follows:

$$C_v = \frac{(A + B - C)(D_m)(10^3)}{B}$$

(C) To convert grams/liter to pounds/gallon, multiply C_v by 8.3455×10^{-3}.

(iii) Class III. Use the procedure in ASTM D 2369-73, Standard Method of Test for Volatile Content of Paints.

(A) Record the same information as specified in paragraph (e) (2) (i) of this section.

(B) Determine the water content P (in percent water) of the paint according to the procedure outlined in Federal Standard 141a, Method 4082.1, Water in Paint and Varnishes (Karl Fischer Titration Method).

(C) Compute the nonaqueous volatile matter content C_v (in grams/liter) as follows:

$$C_v = \frac{(W_1 - W_2 - 0.01\ PS)(D_m)(10^3)}{S}$$

(D) To convert grams/liter to pounds/gallon, multiply C_v by 8.3455×10^{-3}.

§XX.9403 Determination of Volatile Organic Compound Emission Control System Efficiency.

(a) The provisions of this section are generally applicable, in accordance with §XX.9401, to any test method employed to determine the collection or control efficiency of any device or system designed, installed, and operated for the purpose of reducing volatile organic compound emissions.

(b) The following procedures shall be included in any efficiency determination:

(1) The volatile organic compound containing material shall be sampled and analyzed in a manner approved by the Director such that the quantity of emissions that could result from the use of the material can be quantified.

(2) The efficiency of any capture system used to transport the volatile organic compound emissions from their point of origination to the control equipment shall be computed using accepted engineering practice and in a manner approved by the Director.

(3) Samples of the volatile organic compound containing gas stream shall be taken simultaneously at the inlet and outlet of the emissions control device in a manner approved by the Director.

(4) The total combustible carbon content of the samples shall be determined by a method approved by the Director.

(5) The efficiency of the control device shall be expressed as the fraction of total combustible carbon content reduction achieved.

(6) The volatile organic compound mass emission rate shall be the sum of emissions from the control device, emissions not collected by the capture system and capture system losses.

§XX.9404 Determination of Solvent Metal Cleaning Volatile Organic Compound Emissions.

(a) This method is applicable to determining volatile organic compound emissions from solvent metal cleaning equipment.

(b) The purpose of this method is to quantify, by material balance, the amount of solvent input into a degreaser over a sufficiently long period of time so that an average emission rate can be computed.

(c) The following procedure shall be followed to perform a material balance test:

(1) Clean the degreaser sump before testing.

(2) Record the amount of solvent added to the tank with a flow meter.

(3) Record the weight and type of work load degreased each day.

(4) At the end of the test run, pump out the used solvent and measure the amount with a flow meter. Also, estimate the volume of metal chips and other material remaining in the emptied sump, if significant.

(5) Bottle a sample of the used solvent and analyze it to find the percent that is oil and other contaminants. The oil and solvent proportions can be estimated by weighing samples of used solvent before and after boiling off the solvent. Compute the volume of oils in the used solvent. The volume of solvent displaced by this oil along with the volume of make-up solvent added during operations is equal to the solvent emission.

§XX.9405 Test Procedure for Determination of VOC Emissions From Bulk Gasoline Terminals.

(a) Principle. VOC mass emissions are determined directly using flow meters and hydrocarbon analyzers. The volume of liquid gasoline dispensed is determined by computation based on the metered quantity of gasoline at the loading rack. Test results are expressed in milligrams of hydrocarbons emitted per liter of gasoline transferred.

(b) Summary of the Method. This method describes the test conditions and test procedures to be followed in determining the emissions from systems installed to control volatile organic compound vapors resulting from tank truck and trailer loading operations at bulk terminals. Under this procedure, direct measurements are made to compute the hydrocarbon mass exhausted from the vapor control system. All possible sources of leaks are qualitatively checked to insure that no uncontrolled vapors are emitted to the atmosphere. The results are expressed in terms of mass hydrocarbons emitted per unit volume of gasoline transferred. Emissions are determined on a total hydrocarbon basis. If methane is present in the vapors returned from the tank trucks or trailers, provisions are included for conversion to a total nonmethane hydrocarbon basis.

(c) Applicability. This method is applicable to determining VOC emission rates at tank truck and trailer gasoline loading terminals employing vapor collection systems and either continuous or intermittent vapor control systems. This method is applicable to motor tank truck and trailer loading only as per §XX.9212.

(d) Apparatus. The components essential to the evaluation of emissions from gasoline loading terminals are;

(1) portable combustible gas detector equipped to read 0 to 100 percent of the lower explosive limit,

(2) flexible thermocouple with recorder,

(3) gas volume meter, sized for the expected exhaust flow rate and range,

(4) total hydrocarbon analyzer with recorder (flame ionization detector or nondispersive infrared equipped to read 0 to 10 percent by volume hydrocarbon as propane for vapor control systems which recover the vapor as liquid; or 0 to 10,000 ppmv hydrocarbon as propane for incineration vapor control systems),

(5) barometer to measure atmospheric pressure,

(6) gas chromatography/flame ionization detector with a column to separate C_1 - C_7 alkanes; used if methane is present in recovered vapors or if incineration is the vapor control technique.

(e) Test requirements.

(1) No less than three 8-hour test repetitions will be performed.

(2) During the test period, all loading racks shall be open for each product line which is controlled by the system under test. Simultaneous use of more than one loading rack shall occur to the extent that such use would normally occur.

(3) Simultaneous use of more than one dispenser on each loading rack shall occur to the extent that such use would normally occur.

(4) Dispensing rates shall be set at the maximum rate at which the equipment is designed to be operated. Automatic product dispensers are to be used according to normal operating practices.

(5) Applicable operating parameters of the vapor control system shall be monitored to demonstrate that the control unit is operating at design levels. For intermittent vapor control systems employing a vapor holder, each test repetition shall include at least one fully automatic operation cycle of the vapor holder and control device. Tank trucks and trailers shall be essentially leak free as determined by the Director.

(f) Basic Measurements Required. The basic measurements essential to the evaluation of emissions from gasoline loading terminals are:

(1) the amount of gasoline dispensed from gasoline dispensers,

(2) leak check of all fittings and vents,

(3) the following items for the processing unit exhaust;

- (i) temperature,
- (ii) pressure,
- (iii) volume of vapors,
- (iv) hydrocarbon concentration of vapors,
- (v) gas chromatograph analysis of vapors if methane is present in recovered vapors.

(g) Test Procedure.

(1) Calibrate and span all instruments as outlined under paragraph (j) of this section.

(2) Install an appropriately sized gas meter on the exhaust vent of the vapor control system. For those vapor control systems where size restrictions preclude the use of a volume meter; or when incineration is used for vapor control, a gas flow rate meter (orifice, pitot tube, annubar, etc.) is necessary. At the meter inlet, install a thermocouple with recorder. Install a tap at the volume meter outlet. Attach a sample line for a total hydrocarbon analyzer (0 to 10 percent as propane) to this tap. If the meter pressure is different than barometric pressure, install a second tap at the meter outlet and attach an appropriate manometer for pressure measurement. If methane analysis is required, install a third tap for connection to a constant volume sample pump/evacuated bag assembly as described in Method 3, Federal Register, 36:247, December 23, 1977.

(3) Measurements and data required for evaluating emissions from the system;

(i) at the beginning and end of each test repetition, record the volume readings on each product dispenser on each loading rack served by the system under test,

(ii) at the beginning of each test repetition and each 2 hours thereafter, record the ambient temperature and the barometric pressure,

(iii) for intermittent vapor control systems employing a vapor holder, the unit shall be manually started and allowed to process vapors in the holder until the lower automatic cut-off is reached. This cycle should be performed immediately prior to the beginning of the test repetition before readings required under paragraph (g) (3) (i) of this section are taken. No loading shall be in progress during this manual cycle,

(iv) for each cycle of the vapor control system during each test repetition, record the start and stop time, the initial and final gas meter readings, and the average vapor temperature, pressure and hydrocarbon concentration. If a flow rate meter is used, record flow meter readouts continuously during the cycle. If required, extract a sample continuously during each cycle for chromatographic analysis for specific hydrocarbons,

(v) for each tank truck or trailer loading during the test period, check all fittings and seals on the tanker compartments with the combustible gas detector. Record the maximum combustible gas reading for any incidents of leakage of hydrocarbon vapors. Explore the entire periphery of the potential leak source with the sample hose inlet 1 cm (0.4 inches) away from the interface,

(vi) during each test period, monitor all possible sources of leaks in the vapor collection and control systems with the combustible gas indicator. Record the location and combustible gas reading for any incidents of leakage,

(vii) for intermittent vapor control systems, the control unit shall be manually started and allowed to process vapors in the holder until the lower automatic shut-off is reached at the end of each test repetition. Record the data required under paragraph (g) (3) (iv) of this section for this manual cycle. No loading shall be in progress during this manual cycle.

(h) Calculations.

(1) terminology;

T_a = Ambient temperature (°C)

P_b = Barometric pressure (mm Hg)

L_t = Total volume of liquid dispensed from all controlled racks during the test period (liters)

V_e = Volume of air-hydrocarbon mixture exhausted from the processing unit (M^3)

V_{es} = Normalized volume of air-hydrocarbon mixture exhausted, NM^3 @ 20°C, 760 mmHg

C_e = Volume fraction of hydrocarbons in exhausted mixture (volume % as $C_3H_{10}/100$, corrected for methane content if required)

T_e = Temperature at processing unit exhaust (°C)

P_e = Pressure at processing unit exhaust (mm Hg abs)

$(M/L)_e$ = Mass of hydrocarbons exhausted from the processing unit per volume of liquid loaded, (mg/ℓ).

(2) Calculate the following results for each period of the vapor control system operation;

(i) volume of air-hydrocarbon mixture exhausted from the vapor control system:

$V_e = V_{ef} - V_{ei}$, or (M^3)

V_e = totalized volume from flow rate and time records.

(ii) normalized volume of exhausted mixture:

$$V_{es} = \frac{(0.3858\ {}^{\circ}K/mmHg)\ VePe}{(T_e + 273.2)} \quad NM^3\ @\ 20^{\circ}C,\ 760\ mmHg$$

(iii) mass of hydrocarbons exhausted from the vapor control system:

$$M_e = (1.833 \times 10^6\ \frac{mgC_3H_8}{NM^3\,C_3H_8}) \times V_{es}C_e \quad (mg)$$

(3) calculate the average mass of hydrocarbons emitted per volume of gasoline loaded:

$$(M/L)_e = \frac{\Sigma M_e}{L_t} \quad (mg/liter)$$

(j) Calibrations.

(1) Flow meters shall be calibrated using standard methods and procedures which have been approved by the Director.

(2) Temperature recording instruments shall be calibrated prior to a test period and following the test period using an ice bath (0°C) and a known reference temperature source of about 35°C. Daily during the test period, use an accurate reference to measure the ambient temperature and compare the ambient temperature reading of all other instruments to this value.

(3) Manufacturer's instructions concerning warm-up and adjustments shall be followed for total hydrocarbon analyzers. Prior to and immediately after the emission test, perform a comprehensive laboratory calibration on each analyzer used. Calibration gases should be propane in nitrogen prepared gravimetrically with mass quantities of approximately 100 percent propane. A calibration curve shall be provided using a minimum of five prepared standards in the range of concentrations expected during testing;

(i) For each repetition, zero with zero gas (3 ppm C) and span with 70 percent propane for instruments used in the vapor lines and with 10 percent propane for instruments used at the vapor control system exhaust.

(ii) The zero and span procedure shall be performed at least once prior to the first test measurement, once during the middle of the run, and once following the final test measurement for each run.

(iii) Conditions in calibration gas cylinders must be kept such that condensation of propane does not occur. A safety factor of 2 for pressure and temperature is recommended.

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APPENDIX A

EXCERPTS OF EXISTING REGULATIONS ON VOLATILE ORGANIC COMPOUND EMISSIONS

STATE OF ILLINOIS

Rule 205: Organic Material Emission Standards and Limitations.

(a) Storage. No person shall cause or allow the storage of any volatile organic material in any stationary tank, reservoir or other container of more than 40,000 gallons capacity unless such tank, reservoir or other container:

(1) is a pressure tank capable of withstanding the vapor pressure of such materials, so as to prevent vapor or gas loss to the atmosphere at all times; or,

(2) is designed and equipped with one of the following vapor loss control devices:

(A) A floating roof which rests on the surface of the volatile organic material and is equipped with a closure seal or seals to close the space between the roof edge and the tank wall. Such floating roof shall not be permitted if the volatile organic material has a vapor pressure of 12.5 pounds per square inch absolute or greater at 70°F. No person shall cause or allow the emission of air contaminants into the atmosphere from any gauging or sampling devices attached to such tanks, except during sampling.

(B) A vapor recovery system consisting of:

(i) a vapor gathering system capable of collecting 85% or more of the uncontrolled volatile organic material that would be otherwise emitted to the atmosphere; and,

(ii) a vapor disposal system capable of processing such volatile organic material so as to prevent their emission to the atmosphere. No person shall cause or allow the emission of air contaminants into the atmosphere from any gauging or sampling devices attached to such tank, reservoir or other container except during sampling.

(C) Other equipment or means of equal efficiency approved by the Agency according to the provisions of Part 1 of this Chapter 3; or,

(3) is an existing cone roof tank used exclusively for the storage of Illinois crude oil, if all the following conditions are met:

(A) The vapor pressure of such crude oil is less than 5 pounds per square inch absolute (psia); and,

(B) the location of such tank is outside a major metropolitan area; and,

(C) such tank is equipped with positive pressure tank vent valves and vacuum breakers.

(b) Loading.

(1) No person shall cause or allow the discharge of more than 8 pounds per hour of organic material into the atmosphere during the loading of any organic material from the aggregate loading pipes of any loading facility having a throughput of greater than 40,000 gallons per day into any railroad tank car, tank truck or trailer, unless each such loading pipe is equipped with air pollution control equipment capable of reducing by 85 per cent or more the uncontrolled organic material that would be otherswise emitted to the atmosphere if splash loading were employed.

(2) No person shall cause or allow the loading of any organic material into any stationary tank having a storage capacity of greater than 250 gallons, unless such tank is equipped with a permanent submerged loading pipe or an equivalent device approved by the Agency according to the provisons of Part 1 of this Chapter, or unless such tank is a pressure tank as described in **Rule** 205(a)(1) or is fitted with a recovery system as described in Rule 205(a)(2)(B

(3) Exception: If no odor nuisance exists the limitations of subparagraph (b) of this Rule 204 shall only apply to volatile organic material.

(c) Organic Material-Water Separation.

(1) No person shall use any single or multiple compartment effluent water separator which receives effluent water containing 200 gallons a day or more of organic material from any equipment processing, refining, treating, storing, or handling organic material unless such effluent water separator is equipped with air pollution control equipment capable of reducing by 85 per cent or more the uncontrolled organic material emitted to the atmosphere. Exception: If no odor nuisance exists the limitations of this Rule 205(c)(1) shall only apply to volatile organic material.

(2) Rule 205(c)(1) shall not apply to water and crude oil separation in the production of Illinois crude oil, if both the following conditions are met:

(A) The vapor pressure of such crude oil is less than 5 pounds per square inch absolute (psia); and,

(B) The location of such tank is outside a major metropolitan area.

(d) Pumps and Compressors. No person shall cause or allow the discharge of more than two cubic inches of liquid volatile organic material into the atmosphere from any pump or compressor in any 15 minute period at standard conditions.

~~(e)~~ Architectural Coatings. No person shall cause or allow the sale or use in the Chicago or St. Louis (Illinois) Major Metropolitan Areas of any architectural coating containing more than 20 per cent by volume of photochemically reactive material in containers having a capacity of more than one gallon.

(f) Use of Organic Material. No person shall cause or allow the discharge of more than 8 pounds per hour of organic material into the atmosphere from any emission source, except as provided in paragraphs (f)(1) and (f)(2) of this Rule 205 and the following: Exception: If no odor nuisance exists the limitation of this Rule 205(f) shall apply only to photochemically reactive material.

(1) Alternative Standard. Emissions of organic material in excess of those permitted by Rule 205(f) are allowable if such emissions are controlled by one of the following methods:

(A) flame, thermal or catalytic incineration so as either to reduce such emissions to 10 ppm equivalent methane (molecular weight 16) or less, or to convert 85 per cent of the hydrocarbons to carbon dioxide and water; or,

(B) a vapor recovery system which adsorbs and/or absorbs and/or condenses at least 85 per cent of the total uncontrolled organic material that would otherwise be emitted to the atmosphere; or,

(C) any other air pollution control equipment approved by the Agency capable of reducing by 85 per cent or more the uncontrolled organic material that would be otherwise emitted to the atmosphere.

(2) Exceptions: The provisions of Rule 205(f) shall not apply to:

(A) the spraying or use of insecticides, herbicides, or other pesticides;

(B) fuel combustion emission sources;

(C) the application of paving asphalt and pavement marking paint from sunrise to sunset and when air pollution watch, alert or emergency conditions are not declared;

(D) any owner, operator, user or manufacturer of paint, varnish, lacquer, coatings or printing ink whose Compliance Program and Project Completion Schedule, as required by Part 1 of this Chapter, provides for the reduction of organic material used in such process to 20 per cent or less of total volume by May 30, 1975.

(g) Waste Gas Disposal.

(1) Petroleum Refinery and Petrochemical Manufacturing Process Emissions. No person shall cause or allow the discharge of organic materials into the atmosphere from:

(A) any catalyst regenerator of a petroleum cracking system; or,

(B) any petroleum fluid coker; or,

(C) any other waste gas stream from any petroleum or petrochemical manufacturing process;

in excess of 100 ppm equivalent methane (molecular weight 16.0).

(2) Vapor Blowdown. No person shall cause or allow the emission of organic material into the atmosphere from any vapor blowdown system or any safety relief valve, except such safety relief valves not capable of causing an excessive release, unless such emission is controlled:

(A) to 10 ppm equivalent methane (molecular weight 16.0) or less; or,

(B) by combustion in a smokeless flare; or,

(C) by other air pollution control equipment approved by the Agency according to the provisions of Part 1 of this Chapter.

(3) Sets of Unregulated Safety Relief Valves Capable of Causing Excessive Releases. Rule 205(g)(2) shall not apply to any set of unregulated safety relief valves capable of causing excessive releases, provided that the owner or operator thereof, by October 1, 1972, provides the Agency with the following.

(A) an historical record of each such set (or, if such records are unavailable, of similar sets which, by virtue of operation under similar circumstances, may reasonably be presumed to have the same or greater frequency of excessive releases) for a three-year period immediately preceding October 1, 1972, indicating:

(i) dates on which excessive releases occurred from each such set; and,

(ii) duration in minutes of each such excessive release; and;

(iii) quantities (in pounds) of mercaptans and/or hydrogen sulfide emitted into the atmosphere during each such excessive release.

(B) proof, using such three-year historical records, that no excessive release is likely to occur from any such set either alone or in combination with such excessive releases from other sets owned or operated by the same person and located within a ten-mile radius from the center point of any such set, more frequently than 3 times in any 12 month period; and

(C) accurate maintenance records pursuant to the requirements of paragraph (g)(3)(A) of this Rule 205 of this Chapter; and

(D) proof, at three-year intervals, using such three-year historical records, that such set conforms to the requirement of paragraph (g)(3)(C) of this Rule 205.

(h) Emissions During Clean-up Operations and Organic Material Disposal. Emissions of organic material released during clean-up operations and disposal shall be included with other emissions of organic material from the related emission source or air pollution control equipment determining total emissions.

(i) Testing Method for Determination of Emissions of Organic Material. The total organic material concentrations in an effluent stream shall be measured by a Flame Ionization Detector, or by other methods approved by the Agency according to the provisions of Part 1 of this Chapter.

(j) Compliance Dates.

(1) Every owner or operator of a new emission source shall comply with the standards and limitations of Rule 205 on the effective date of Part 2 of this Chapter.

(2) Every owner or operator of an existing emission source shall comply with the standards and limitations of Rule 205 by December 31, 1973.

STATE OF INDIANA

AIR POLLUTION CONTROL BOARD
OF THE STATE OF INDIANA

REGULATION APC 15

Maximum Allowable Hydrocarbon Emissions

A REGULATION, pursuant to the authority found in IC 1971, 13-1-1 and IC 1971, 13-7, amending certain sections of APC 15, promulgated on September 14, 1972, which established Maximum Allowable Hydrocarbon Emissions.

Section 1. (Definitions) The following terms, as used in this regulation unless otherwise provided, shall have the following meanings:

(a) The term "Submerged Fill Pipe" shall mean any fill pipe the discharge opening of which is entirely submerged when the liquid level is 6 inches above the bottom of the tank; or when applied to a tank which is loaded from the side, shall mean any fill pipe the discharge of which is entirely submerged when the liquid level is 18 inches or is twice the diameter of the fill pipe, whichever is greater, above the bottom of the tank.

(b) The term "Volatile Organic Materials" shall mean any material containing carbon and hydrogen or containing carbon and hydrogen in combination with any other element which has a vapor pressure of 2.5 pounds per square inch absolute or greater under actual conditions.

Section 2. This regulation is applicable to all existing stationary sources located within an air quality basin designated as Priority A and to all new stationary sources regardless of location. Air quality basin priority ratings are defined in Regulation APC 22. Hydrocarbon emissions from all stationary sources shall be controlled to meet rules set forth herein to attain the desired air quality standards and to maintain air quality consistent with the law where it is better than the standards, and existing sources shall adhere to the following compliance schedule:

Submit plans and specifications by - April 1, 1973
Start construction by - January 1, 1974
Complete construction and start up by - January 1, 1975
Submit performance results by - April 1, 1975

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Section 3. Storage of volatile organic materials

(a) No person shall place, store, or hold in any stationary tank, reservoir or other container of more than 40,000 gallons capacity any volatile organic material unless such tank, reservoir, or other container is a pressure tank capable of maintaining working pressures sufficient at all times to prevent vapor or gas loss to the atmosphere or is designed and equipped with one of the following vapor loss control devices:

(1) A floating roof, consisting of a pontoon-type, double deck-type or internal floating cover, resting on the surface of the liquid contents and equipped with a closure seal or seals to close the space between the roof edge and tank wall. This control equipment shall not be permitted if the volatile organic material has a vapor pressure of 12.0 pounds per square inch absolute or greater under actual storage conditions.

(2) A vapor recovery system, consisting of a vapor gathering system capable of collecting the vapors and gases discharged and a vapor disposal system capable of processing such vapors and gases so as to prevent their emission to the atmosphere.

(3) Other equipment or means for purposes of vapor loss control as may be approved by the Board.

(b) No person shall place, store or hold in any stationary storage vessel of more than 250 gallons capacity any volatile organic compound unless such vessel is equipped with a submerged fill pipe during loading operations, or is a pressure tank, or is equipped with a vapor recovery system as described in Section 3(a).

Section 4. Volatile organic materials loading facilities.

(a) No person shall load any volatile organic materials into any tank, tank car, truck, trailer, or barge from any loading facility unless such loading facility is equipped with a vapor collection and disposal system, bottom loading, submerged loading, or equivalent, approved by the Board.

(b) When loading of volatile organic materials into any tank, tank car, truck, trailer, or barge through a loading arm equipped with a vapor collecting adaptor, a pneumatic, hydraulic or other mechanical means shall be provided to force a vapor-tight seal between the adaptor and the hatch. A means shall be provided to prevent liquid organic material drainage from the loading device when it is removed from the hatch of any tank, tank car, truck, trailer, or barge or to accomplish complete drainage before such removal.

(c) When loading of volatile organic materials is effected through means other than hatches, all loading and vapor lines shall be equipped with fittings which make vapor-tight connections and which close automatically when disconnected.

(d) This rule shall not apply to the loading of volatile organic materials into tank, tank car, truck, trailer, or barge from any loading facility which handles less than 40,000 gallons of volatile organic material in any one day.

Section 5. Volatile organic liquid - water separators

(a) No person shall use any compartment of any single or multiple compartment volatile organic liquid - water separator which compartment normally receives effluent water containing 200 gallons per day or more of any volatile organic liquid from any equipment processing, refining, treating, storing, or handling volatile organic liquids unless such compartment is equipped with one of the following vapor loss control devices, properly installed, in good working order and in operation:

(1) A solid cover.

(2) A floating roof or cover resting on the surface of the liquid contents.

(3) A vapor recovery system of suitable design.

(4) Other equipment or means to control evaporation losses as may be approved by the Board.

(b) This rule shall not apply to any volatile organic material - water separator used exclusively in conjunction with the production of crude oil.

Section 6. Waste gas emissions

(a) Petroleum Refinery Emissions - No person shall cause or allow the discharge of hydrocarbons from any catalyst regeneration of a petroleum cracking system or from any petroleum fluid coker into the atmosphere unless the waste gas stream is burned in a direct-flame afterburner or boiler or is controlled by other means approved by the Board.

(b) Ethylene Manufacturing Emissions - No person shall emit a waste gas stream from any ethylene producing plant into the atmosphere unless the waste gas stream is properly burned in a direct-flame afterburner or is controlled by other means as may be approved by the Board.

(c) Vapor Blowdown - No person shall emit hydrocarbon gases to the atmosphere from any vapor blowdown stream, except pressure relief valves which are required for safety reasons, unless these gases are burned in flares of smokeless design or are controlled by other means as may be approved by the Board.

Section 7. Volatile waste organic liquids

(a) No person shall dispose of any liquid or semi-liquid volatile waste organic material or sludge within the State of Indiana by any means other than as follows:

(1) Refining by acceptable means, within the scope of this regulation or other regulations that are applicable, to produce an acceptable produce for reuse.

(2) Consuming in heat generation equipment, so that its heat value can be utilized, and compliance with this regulation or other applicable regulations are met.

(3) Incineration by acceptable means if (1) and (2) above are not economically feasible. Compliance with this regulation or other regulations shall be accomplished.

(4) Other means for disposal, acceptable to the Board, but in no case discarding in a landfill, refuse dump or the equivalent.

Section 8. Emissions of Organic Solvents

(a) No person shall emit or cause the emission of more than 3 pounds of organic materials in any one hour or 15 pounds of organic materials in any one day (24 hours) from any article, machine, or equipment unless all organic materials emitted from such article, machine, or equipment are reduced by at least 85 percent from emissions before the application of any control equipment or process.

(1) The aggregate emissions of organic materials into the atmosphere from any series of articles, machines, or equipment designed for processing a continuously moving sheet, web, strip, or wire by a combination of operations shall comply with the requirements of this section.

(2) Emissions of organic materials into the atmosphere which result from the cleaning of any article, machine or equipment with organic solvents shall be included with the other emissions or organic materials from such article, machine or equipment in determining compliance with this section.

(3) Emissions or organic materials into the atmosphere which result from the spontaneous drying of products after their removal from any article, machine, or equipment shall be included with other emissions of organic materials from such article, machine, or equipment in determining compliance with this section.

(b) The provisions of this section shall not apply to:

(1) The manufacture of organic solvents.

(2) The spraying or other employment of insecticides, pesticides, or herbicides.

(3) Industrial surface coating operations when the coating's solvent make-up does not contain photochemically reactive organic materials by volume greater than set forth in Section 8(b)(4).

(4) The use of the following solvents:

(i) hydrocarbons, alcohols, aldehydes, esters, ethers or ketones provided that the total of such solvents with olefinic or cyclo-olefinic unsaturation does not exceed 5% by volume either singly or in combinations.

(ii) aromatic organic solvents provided that the total of such solvents with 8 or more carbon atoms to the molecule, excluding ethyl benzene, does not exceed 8% by volume either singly or in combinations.

(iii) ethyl benzene, ketones having branched hydrocarbon structures, trichloroethylene or toluene not exceeding 20% by volume either singly or in combinations.

(iv) any organic solvent or mixture of solvents which, because of its structure or composition, may be subject to the limitations of more than one of the categories (i), (ii) or (iii), above, shall be considered a member of the class with the lowest percentage limitation. In no case shall a combination of compounds subject to the limitations of (i), (ii) or (iii), above, exceed 20% by volume of the combination.

(v) saturated halogenated hydrocarbons, perchloroethylene, benzene, acetone, C_1-C_5 n-paraffins, cyclohexanone, ethyl acetate, diethylamine, isobutyl acetate, isopropyl alcohol, methyl benzoate, 2-nitropropane, phenyl acetate, and triethylamine.

(vi) other organic solvents that have been determined by the Air Pollution Control Board to be photochemically unreactive in the formation of oxidants.

(c) For the purposes of this section:

(1) Organic materials are defined as chemical compounds of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides, metallic carbonates, and ammonium carbonate.

(2) Organic solvents are defined as organic materials which are liquids at standard conditions, and include diluents which are used as dissolvers, viscosity reducers, and cleaning agents.

(d) A greater degree of control may be required to prevent a health hazard or a local nuisance because of the particular properties of a specific organic compound. Determination of a health hazard will be based upon such factors as threshold limit values, presence of carcinogens, and other accepted health indicators.

(e) Acceptable control methods to provide compliance shall be:

(1) Consuming such gases or vapors in acceptable fuel burning equipment.

(2) Absorption or adsorption by acceptable means.

(3) Incineration by direct flame or catalytic combustion means, preferably with heat recovery means.

(4) Oxidation by chemical means utilizing oxidizing agents or ozone, if practical.

(5) Other means acceptable to the Board.

STATE OF MINNESOTA

CHAPTER THIRTEEN: APC 13

APC 13 Standards of Performance for Storage Vessels for Petroleum Liquids

(a) Definitions. As used in this regulation the following words shall have the meanings defined herein:

(1) "Storage vessel" means any tank, reservoir, or container used for the storage of petroleum liquids, but does not include:

(aa) Pressure vessels which are designed to operate in excess of 15 pounds per square inch gauge without emissions to the atmosphere except under emergency conditions.

(bb) Subsurface caverns or porous rock reservoirs, or

(cc) Underground tanks if the total volume of petroleum liquids added to and taken from a tank annually does not exceed twice the volume of the tank.

(2) "Petroleum liquids" means petroleum, condensate, and any finished or intermediate products manufactured in a petroleum refinery but does not mean Number 2 through Number 6 fuel oils as specified in A.S.T.M. D396-69, gas turbine fuel oils Numbers 2-GT through 4-GT as specified in A.S.T.M. D2880-71, or diesel fuel oils Numbers 2-D and 4-D as specified in A.S.T.M. D975-68.

(3) "Petroleum refinery" means any facility engaged in producing gasoline, kerosene, distillate fuel oils, residual fuel oils, lubricants, or other products through distillation of petroleum or through redistillation, cracking, or reforming of unfinished petroleum derivatives.

(4) "Petroleum" means the crude oil removed from the earth and the oils derived from tar sands, shale, and coal.

(5) "Hydrocarbon" means any organic compound consisting predominantly of carbon and hydrogen.

(6) "Condensate" means hydrocarbon liquid separated from natural gas which condenses due to changes in the temperature and/or pressure and remains liquid at standard conditions.

(7) "Custody transfer" means the transfer of produced petroleum and/or condensate, after processing and/or treating in the producing operations, from storage tanks or automatic transfer facilities to pipelines or any other forms of transportation.

(8) "Drilling and production facility" means all drilling and servicing equipment, wells, flow lines, separators, equipment, gathering lines, and auxiliary nontransportation-related equipment used in the production of petroleum but does not include natural gasoline plants.

(9) "True vapor pressure" means the equilibrium partial pressure exerted by a petroleum liquid as determined in accordance with methods described in American Petroleum Institute Bulletin 2517, Evaporation Loss from Floating Roof Tanks, 1962.

(10) "Floating roof" means a storage vessel cover consisting of a double deck, pontoon single deck, internal floating cover or covered floating roof, which rests upon and is supported by the petroleum liquid being contained, and is equipped with a closure seal or seals to close the space between the roof edge and tank wall.

(11) "Vapor recovery system" means a vapor gathering system capable of collecting all hydrocarbon vapors and gases discharged from the storage vessel and a vapor disposal system capable of processing such hydrocarbon vapors and gases so as to prevent their emission to the atmosphere.

(12) "Reid vapor pressure" is the absolute vapor pressure of volatile crude oil and volatile non-viscous petroleum liquids, except liquified petroleum gases, as determined by A.S.T.M.-D-323-58 (reapproved 1968).

(13) "Submerged fill pipe" means any fill pipe the discharge opening of which is entirely submerged when the liquid level is six inches above the bottom of the storage vessel. When applied to a storage vessel which is loaded from the side, "submerged fill pipe" means any fill pipe the discharge opening of which is entirely submerged when filling except for filling after the vessel has been emptied for cleaning and repairs.

(b) Standards of Performance for Storage Vessels

(1) Pre 1969 Storage Vessels. There are no standards of performance promulgated in this regulation for storage vessels for which construction was commenced prior to July 7, 1969.

(2) July 7, 1969, to June 11, 1973, Storage Vessels.

(aa) There are no standards of performance promulgated in this regulation for storage vessels with a storage capacity of 2,000 gallons (7,571 liters) or less for which construction was commenced after July 7, 1969, but prior to June 11, 1973.

(bb) The owner or operator of any storage vessel with a storage capacity of greater than 2,000 gallons (7,571 liters) but less than or equal to 65,000 gallons (246,405 liters) for which construction was commenced after July 7, 1969, but prior to June 11, 1973, shall equip the storage vessel with a permanent submerged fill pipe or comply with the requirements of paragraph (b)(3)(cc) of this regulation.

(cc) The owner or operator of any storage vessel with a storage capacity of greater than 65,000 gallons (246,405 liters) for which construction was commenced after July 7, 1969, but prior to June 11, 1973, shall comply with the following requirements:

(i) If the true vapor pressure of the petroleum liquid, as stored, is equal to or greater than 128 mm Hg (2.5 psia) but not greater than 642 mm Hg (12.5 psia) the storage vessel shall be equipped with a floating roof, a vapor recovery system or their equivalents.

(ii) If the true vapor pressure of the petroleum liquid, as stored, is greater than 642 mm Hg (12.5 psia), the storage vessel shall be equipped with a vapor recovery system or its equivalent.

(3) Post June 11, 1973, Storage Vessels.

(aa) There are no standards of performance promulgated in this regulation for storage vessels with a storage capacity of 2,000 gallons (7,571 liters) or less for which construction was commenced on or after June 11, 1973.

(bb) The owner or operator of any storage vessel with a storage capacity of greater than 2,000 gallons (7,571 liters) but less than or equal to 40,000 gallons (151,412 liters) for which construction was commenced on or after June 11, 1973, shall equip the storage vessel with a permanent submerged fill pipe or comply with the requirements of paragraph (b)(3)(cc) of this regulation.

(cc) The owner or operator of any storage vessel with a storage capacity of greater than 40,000 gallons (151,412 liters) for which construction was commenced on or after June 11, 1973, shall comply with the following requirements:

(i) If the true vapor pressure of the petroleum liquid, as stored, is equal to or greater than 78 mm Hg (1.5 psia) but not greater than 570 mm Hg (11.1 psia), the storage vessel shall be equipped with a floating roof, a vapor recovery system, or their equivalents.

(ii) If the true vapor pressure of the petroleum liquid as stored is greater than 570 mm Hg (11.1 psia), the storage vessel shall be equipped with a vapor recovery system or its equivalent.

(c) Monitoring of Operations

(1) The owner or operator of any storage vessel, the construction or modification of which commenced on or after June 11, 1973, which has a storage capacity of greater than 40,000 gallons (151,412 liters) shall for each storage vessel:

(aa) Maintain a file of each type of petroleum liquid stored, of the typical Reid vapor pressure of each type of petroleum liquid stored, of the dates of storage and withdrawals, and of the dates on which the storage vessel is empty.

(bb) Determine and record the average monthly storage temperature and true vapor pressure of the petroleum liquid stored at such temperature if:

(i) The petroleum liquid has a true vapor pressure, as stored, greater than 26 mm Hg (0.5 psia) but less than 78 mm Hg (1.5 psia) and is stored in a storage vessel other than one equipped with a floating roof, a vapor recovery system or their equivalents; or

(ii) The petroleum liquid has a true vapor pressure, as stored, greater than 470 mm Hg (9.1 psia) and is stored in a storage vessel other than one equipped with a vapor recovery system or its equivalent.

(2) The average monthly storage temperature is an arithmetic average calculated for each calendar month, or portion thereof if storage is for less than a month, from bulk liquid storage temperatures determined at least once every 7 days.

(3) The true vapor pressure shall be determined by the procedure in American Petroleum Institute Bulletin 2517. This procedure is dependent upon determination of the storage temperature and the Reid vapor pressure, which requires sampling of the petroleum liquids in the storage vessels. Unless the Agency or the Director requires in specific cases that the stored petroleum liquid be sampled, the true vapor pressure may be determined by using the average monthly storage temperature and the typical Reid vapor pressure. For those liquids for which certified specifications limiting the Reid vapor pressure exist, that Reid vapor pressure may be used. For other liquids, supporting analytical data must be made available on request of the Agency or the Director when typical Reid vapor pressure is used.

(d) Exception. The provisions of this regulation do not apply to storage vessels for petroleum or condensate stored, processed, or treated at a "drilling and production" facility prior to custody transfer.

[July 7, 1969; amended March 12, 1976]

STATE OF OHIO

AP-5-07 Control of Emissions of Organic Materials from Stationary Sources.

(A) These regulations are applicable to all existing stationary sources located within a Priority 1 region and to all new stationary sources regardless of location.

(B) Except as otherwise provided in these regulations, all new stationary emission sources of photochemically reactive materials shall minimize such emissions by use of the latest available control techniques and operating practices in accordance with best current technology.

(C) Nothing in this regulation shall be construed to preclude the use of alternative means to abate emissions, if such alternative is approved by the Board and will not result in emissions significantly greater than would result from the application of the means specified herein.

(D) Storage of volatile photochemically reactive materials:

(1) No person shall place, store, or hold in any stationary tank, reservoir or other container of more than 65,000 gallons capacity any volatile photochemically reactive material unless such tank, reservoir, or other container is a pressure tank capable of maintaining working pressures sufficient at all times to prevent vapor or gas loss to the atmosphere or is designed, and equipped with one of the following vapor loss control devices:

(a) A floating pontoon or double-deck type cover equipped with closure seals to enclose any space between the cover's edge and compartment wall. This control equipment shall not be permitted if the volatile photochemically reactive material has a vapor pressure of 12.5 pounds per square inch absolute or greater under actual storage conditions. All tank gauging or sampling devices shall be gas-tight except when tank gauging or sampling is taking place.

(b) A vapor recovery system which reduces the emission of organic materials into the atmosphere by at least 90 percent by weight. All tank gauging or sampling devices shall be gas-tight except when tank gauging or sampling is taking place.

(c) Other equipment or means of air pollution control as may be approved by the Board.

(2) No person shall place, store, or hold in any stationary storage vessel of more than 500-gallon capacity any volatile photochemically reactive material unless such vessel is equipped with a permanent submerged fill pipe, is loaded through the use of a portable loading tube which can be inserted below the liquid level line during loading operations, or is a pressure tank as described in subsection (D)(1) of this regulation or is fitted with a vapor recovery system as described in subsection (D)(1)(b) of this regulation.

(E) **Volatile photochemically reactive materials loading facilities:**

(1) **No person shall load in any one day more than 40,000 gallons of any volatile photochemically reactive material into any tank truck, trailer, or railroad tank car from any loading facility unless the loading facility is equipped with a vapor collection and disposal system properly installed, in good working order, in operation, and consisting of one of the following:**

(a) An adsorber system or condensation system which processes and recovers at least 90 percent by weight of all vapors and gases from the equipment being controlled.

(b) **A vapor handling system which directs all vapors to a fuel gas system.**

(c) Other equipment or means for purposes of air pollution control as may be acceptable to and approved by the Board.

(2) All loading from facilities subject to the provisions of subsections (E)(1)(a) and (E)(1)(b) of this regulation shall be accomplished in such a manner that all displaced vapors and gases shall be vented only to the vapor collection system. A means shall be provided to prevent liquid drainage from the loading device when it is not in use or to accomplish complete drainage before the loading device is disconnected.

(F) Volatile photochemically reactive material/water separation.

(1) No person shall use any compartment of any vessel or device operated for the recovery of volatile photochemically reactive materials from an effluent water separator which recovers 200 gallons a day or more of any volatile photochemically reactive material unless such compartment is equipped with one of the following vapor loss control devices, properly installed, in good working order and in operation:

(a) A solid cover with all openings sealed and totally enclosing the liquid contents of the compartment. All gauging and sampling devices shall be gas-tight except when gauging or sampling is taking place.

(b) A floating pontoon or double-deck type cover equipped with closure seals to enclose any space between the cover's edge and compartment wall. All gauging and sampling devices shall be gas-tight except when gauging or sampling is taking place.

(c) A vapor recovery system which reduces the emission of organic materials into the atmosphere by at least 90 percent by weight. All gauging and sampling devices shall be gas-tight except when gauging or sampling is taking place.

(d) Other equipment or means of air pollution control as may be approved by the Board.

(G) Operations using liquid organic materials:

(1) A person shall not discharge more than 15 pounds of organic materials into the atmosphere in any one day, nor more than 3 pounds in any one hour, from any article, machine, equipment, or other contrivance in which any liquid organic material or substance containing liquid organic material comes into contact with flame or is baked, heat-cured, or heat-polymerized, in the presence of oxygen, unless said discharge has been reduced by at least 85 percent.

(2) A person shall not discharge more than 40 pounds of organic material into the atmosphere in any one day, nor more than 8 pounds in any one hour, from any article, machine, equipment, or other contrivance used under conditions other than described in subsection (G)(1) of this regulation for employing, applying, evaporating or drying any photochemically reactive material or substance containing such photochemically reactive material, unless said discharge has been reduced by at least 85 percent.

(3) Any series of articles, machines, equipment or other contrivances designed for processing a continuously moving sheet, web, strip, or wire which is subjected to any combination of operations described in subsection (G)(1) or (G)(2) of this regulation involving any photochemically reactive material, or substance containing such photochemically reactive material, shall be subject to compliance with subsection (G)(2) of this regulation. Where only nonphotochemically reactive materials or substances containing only nonphotochemically reactive materials are employed or applied, and where any portion or portions of said series of articles, machines, equipment, or other contrivances involves operations described in subsection (G)(1) of this regulation, said portions shall be collectively subject to compliance with subsection (G)(1) of this regulation.

(4) Emissions of organic materials to the atmosphere from the cleanup with photochemically reactive materials of any article, machine, equipment, or other contrivance described in subsection (G)(1), (G)(2), or (G)(3) of this regulation, shall be included with the other emissions of organic materials from that article, machine, equipment, or other contrivance for determining compliance with this regulation.

(5) Emissions of organic materials to the atmosphere resulting from air or heated drying of products for the first 12 hours after their removal from any article, machine, equipment, or other contrivance described in subsection (G)(1), (G)(2), or (G)(3) of this regulation, shall be included with other emissions of organic materials from that article, machine, equipment, or other contrivance, for determining compliance with this regulation.

(6) Emissions of organic materials into the atmosphere required to be controlled by subsection (G)(1), (G)(2), or (G)(3) of this regulation, shall be reduced by:

(a) Incineration, provided that 90 percent or more of the carbon in the organic material being incinerated is oxidized to carbon dioxide, or

(b) Adsorption, or

(c) Processing in a manner determined by the Board to be not less effective than (a) or (b) above.

(7) A person incinerating, adsorbing, or otherwise processing liquid organic materials pursuant to this rule shall provide, properly install, and maintain in calibration, in good working order and in operation, devices as specified in the authority to construct or the permit to operate, or as specified by the Board, for indicating temperatures, pressures, rates of flow, or other operating conditions necessary to determine the degree and effectiveness of air pollution control.

(8) Any person using liquid organic materials or substances containing any liquid organic materials shall supply the Board, upon request and in the manner and form prescribed by the Board, written evidence of the chemical composition, physical properties, and amount consumed for each organic solvent used.

(9) The provisions of section (G) of this regulation shall not apply to:

(a) The use of equipment for which other requirements are specified by sections (D), (E), and (F) of this regulation, or which are exempt from air pollution control requirements by said section.

(b) The spraying or other employment of insecticides, pesticides, or herbicides.

(c) The use of any material, in any article, machine, equipment, or other contrivance described in subsection (G)(1), (G)(2), (G)(3), or (G)(4) of this regulation, if:

(i) the volatile content of such material consists only of water and liquid organic material, and

(ii) the liquid organic material comprises not more than 20 percent of said volatile content, and

(iii) the volatile content is not a photochemically reactive material.

(d) The use of any material, in any article, machine, equipment or other contrivance described in subsection (G)(1), (G)(2), (G)(3), or (G)(4) of this regulation, if:

(i) the volatile content of such material does not exceed 20 percent by volume of said material, and

(ii) the volatile content is not a photochemically reactive material.

(e) The use, in any article, machine, equipment, or other contrivance described in subsection (G)(1), (G)(2), (G)(3), or (G)(4), of liquid organic materials which exhibit a boiling point higher than 220°F at 0.5 millimeter mercury absolute pressure, or having an equivalent vapor pressure, unless such liquid organic material is exposed to temperatures exceeding 220°F.

(f) The use of any material, in any article, machine, equipment or other contrivance described in subsection (G)(1), (G)(2), (G)(3), or (G)(4), if it can be demonstrated to the Board's satisfaction that the emissions of organic materials into the atmosphere from such article, machine, equipment or other contrivance are not photochemically reactive.

(H) Architectural coatings.

(1) A person shall not sell or offer for sale for use in containers of greater than 1-gallon capacity, any architectural coating containing a photochemically reactive material.

(2) A person shall not employ, apply, evaporate, or dry any architectural coating, purchased in containers of greater than 1-gallon capacity, containing a photochemically reactive material.

(3) A person shall not thin or dilute for application any architectural coating with a photochemically reactive material.

(I) Disposal and evaporation of solvents:

A person shall not, during any one day, dispose of a total of more than 1 1/2 gallons of any volatile photochemically reactive material, or dispose of any substance containing more than 1 1/2 gallons of any volatile photochemically reactive material, by any means which will permit the evaporation of such volatile photochemically reactive material into the atmosphere.

STATE OF OHIO
ENVIRONMENTAL PROTECTION AGENCY

RESOLUTION

WHEREAS, under rule AP-5-07(E)(1)(c), the Director of the Ohio Environmental Protection Agency, as successor to the Ohio Air Pollution Control Board, has authority to approve equipment to control emissions of volatile photochemically reactive materials at loading facilities; and

WHEREAS, the Director has reviewed the acceptability of fully submerged loading and bottom loading equipment as an alternative to vapor recovery, absorption or condensation systems; and

WHEREAS, the Director has reached the following conclusions:

(1) Fully submerged loading or bottom loading reduced emissions of hydrocarbons by approximately 65% to 70% as compared to uncontrolled splash loading, while vapor recovery systems, when optimally operating, reduce hydrocarbon emissions by no more than 85% as compared to uncontrolled splash loading.

(2) This difference in emission controls will increase total hydrocarbon emissions in Priority 1 regions by no more than 0.5%.

(3) Vapor recovery and vapor incineration systems as presently designed are not reliable in conditions of cold weather and present an increased danger of operational hazard.

(4) The installation of fully submerged loading or bottom loading is essential as a part of the installation of any vapor recovery system.

(5) Additional research and development over the coming months and years can be expected to either overcome the present weaknesses of the vapor recovery system or produce alternative control systems that are more effective than fully submerged loading.

NOW, THEREFORE, IT IS RESOLVED THAT

(1) Bottom loading or fully submerged loading is hereby approved as an acceptable means of controlling hydrocarbon emissions under rule AP-5-07(E)(1)(c) when installed in such a manner as to permit the addition of vapor recovery or vapor incineration units when and if such units become acceptable.

(2) The acceptability of bottom loading or fully submerged loading without the addition of vapor control or vapor incineration systems will be reviewed one year from the date of this resolution to determine whether improvements in the design of vapor recovery or vapor incineration systems, or other alternative systems, have progressed to such a point as to justify requiring their installation.

STATE OF WISCONSIN

History: Cr. Register, March, 1972, No. 195, eff. 4-1-72; cr. (3), Register, June, 1975, No. 234, eff. 7-1-75; cr. (2) (c), Register, April, 1976, No. 244, eff. 5-1-76.

NR 154.13 Control of organic compound emissions. (1) GENERAL LIMITATIONS. No person shall cause, suffer, allow or permit organic compound emissions into the ambient air which substantially contribute to the exceeding of an air standard or cause air pollution.

(2) STORAGE OF PETROLEUM LIQUIDS. (a) The storage, monitoring and maintenance requirements of subsections (2) (b), (c) and (d) of this section shall apply to all new or modified storage vessels for petroleum liquids of more than 40,000-gallon (151,412 liter) capacity, with the exception of:

1. Storage vessels for the crude petroleum or condensate stored, processed and/or treated at a drilling and production facility outside a Standard Metropolitan Statistical Area prior to custody transfer.

2. Pressure vessels which are designed to operate at pressures in excess of 15 pounds per square inch gauge without emissions into the atmosphere except under emergency conditions.

3. Subsurface caverns or porous rock reservoirs.

4. Underground tanks if the total volume of petroleum liquids added to and taken from a tank annually does not exceed twice the volume of the tank.

(b) Storage requirements. The owner or operator of any storage vessel to which this section applies shall store petroleum liquids as follows:

1. If the true vapor pressure of the petroleum liquid, as stored, is equal to or greater than 1.5 pounds per square inch absolute (78 millimeters of mercury) but not greater than 11.1 pounds per square inch absolute (570 millimeters of mercury), the storage vessel shall be equipped with a floating roof, a vapor recovery system or their equivalents.

2. If the true vapor pressure of the petroleum liquid, as stored, is greater than 11.1 pounds per square inch absolute (570 millimeters of mercury), the storage vessel shall be equipped with a vapor recovery system or its equivalent.

(c) Monitoring requirements. 1. The owner or operator of any storage vessel to which this section applies shall, for each such storage vessel, maintain a file of each type of petroleum liquid stored, the typical Reid vapor pressure of each type of petroleum liquid stored and the dates of storage. Dates on which the storage vessel is empty shall be indicated.

2. The owner or operator of any storage vessel to which this section applies shall, for each such storage vessel, determine and record the

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average monthly storage temperature and true vapor pressure of the petroleum liquid stored at such temperature if:

a. The petroleum liquid has a true vapor pressure, as stored, greater than 0.5 pounds per square inch absolute (26 millimeters of mercury) but less than 1.5 pounds per square inch absolute (78 millimeters of mercury) and is stored in a vessel other than one equipped with a floating roof, a vapor recovery system or their equivalents; or

b. The petroleum liquid has a true vapor pressure, as stored, greater than 9.1 pounds per square inch absolute (470 millimeters of mercury) and is stored in a storage vessel other than one equipped with a vapor recovery system or its equivalent.

3. The average monthly storage temperature is an arithmetic average calculated for each calendar month, or portion thereof if storage is for less than a month, from bulk liquid storage temperatures determined at least once every 7 days.

4. The true vapor pressure shall be determined by the procedures in API Bulletin 2517. This procedure is dependent upon determination of the storage temperature and the Reid vapor pressure, which requires sampling of the petroleum liquids in the storage vessels. Unless the department requires in specific cases that the stored petroleum liquid be sampled, the true vapor pressure may be determined by using the average monthly storage temperature and the typical Reid vapor pressure. For those liquids for which certified specifications limiting the Reid vapor pressure exist, that Reid vapor pressure may be used. For other liquids, supporting analytical data must be made available on request to the department when typical Reid vapor pressure is used.

(cm) American Petroleum Institute, Bulletin 2517 *Evaporation Loss from Floating Roof Tanks*, February, 1962. Copies of Bulletin 2517, *Evaporation Loss from Floating Roof Tanks* are available for inspection in the office of the department of natural resources, Pyare Square Building and secretary of state and revisor of statutes, State Capitol, Madison, Wisconsin, and may be obtained for personal use

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from the American Petroleum Institute, 1801 K Street, N.W., Washington, D.C. 20006.

(d) Maintenance requirements. No person shall place, hold or store in a storage vessel any petroleum liquid which has a vapor pressure under storage conditions in excess of 1.5 pounds per square inch absolute, unless:

1. It is painted and maintained so as to prevent excessive temperature and vapor pressure increases.

2. The seals of any floating roof are maintained so as to minimize emissions, and

3. All gaging and sampling devices are gas-tight except when gaging or sampling are taking place.

(3) PHOTOCHEMICALLY REACTIVE ORGANIC SUBSTANCES. (a) An organic compound shall be considered reactive if it is included in any of the following 3 groups:

1. Group A: Hydrocarbons, alcohols, aldehydes, esters, ethers or ketones, which have olefinic or cyclo-olefinic type unsaturation.

2. Group B: Aromatic compounds with 8 or more carbon atoms to the molecule, except ethylbenzene.

3. Group C: Ethylbenzene, toluene, or ketones having branched hydrocarbon structures.

(b) A solvent or mixture of organic compounds shall be considered reactive if any of the following conditions are met:

1. More than 20% of the total volume is composed of any combination of compounds listed in Groups A, B or C in NR 154.13 (3) (a).

2. More than 5% of the total volume is composed of any combination of the compounds listed in Group A in NR 154.13 (3) (a).

3. More than 8% of the total volume is composed of any combination listed in Group B in NR 154.13 (3) (a).

(4) CONTROL OF PHOTOCHEMICALLY REACTIVE ORGANIC SUBSTANCES. In the Southeast Wisconsin Intrastate AQCR or for any new or modified direct source throughout the state, control of reactive organic substance emissions shall include, but is not limited to, the precautions listed in this subsection. Compliance with the limitations in this subsection shall not preclude any source from conformance with any and all limitations in NR 154.13.

(a) When storing, handling or transporting photochemically reactive organic compounds, solvents or mixtures having a vapor pressure greater than 1.5 psia at 70°F, the following limitations shall apply:

1. On storage tanks having greater than 40,000-gallon capacity, floating roofs, vapor condensation systems, vapor holding tanks or similar controls shall be used.

2. On storage tanks having greater than 1,000-gallon capacity, a permanent submerger fill pipe must be used, provided such a tank does not have controls mentioned in NR 154.13(4) (a) 1.

3. At facilities with over 40,000 gallons per day throughput, a vapor collection and disposal system, vapor collection adaptors and vapor-tight seal, or an underfill method with the top hatches partially closed or a means of creating a slight back pressure when loading tank trucks or trailers must be used.

4. At facilities with 40,000 gallons or less per day throughput, the underfill method or a submerged fill pipe extending to within 6 inches of the tank bottom shall be employed when loading tank trucks or trailers.

(b) For any process line emitting photochemically reactive organic compounds, solvents or mixtures, the following limitations shall apply:

1. Any process line, except enclosed paint spray booths and volatile organic compound water separation systems, which emits more than 15 pounds per day or 3 pounds per hour of a reactive organic compound, solvent or mixture must control these emissions by at least 85%.

2. Any enclosed paint spraying operation which emits more than 30 pounds per day or 6 pounds per hour of a reactive organic compound, solvent or mixture must control these emissions by at least 85%.

3. Any volatile reactive organic compound—water separation system that processes over 200 gallons per day must control the emission of volatile organic substances by at least 85%.

(c) No person shall cause, suffer, allow or permit organic compounds to be handled or used without taking reasonable precautions to prevent the escape or emission of photochemically reactive organic compounds, solvents or mixtures. Such precautions shall include, but are not limited to:

1. Use of caution to prevent spillage or leakage when filling tanks, trucks or trailers.

2. Use of caution when filling automobile tanks to prevent spillage.

3. Use of disposal methods which prevent organic compounds from being evaporated in or emitted to the ambient air.

(d) Exceptions to limitations. The provisions of sections NR 154.13(4) (a), (4) (b) and (4) (c) shall not apply to the use or application of insecticides, pesticides, herbicides, saturated halogenated hydrocarbons, perchlorethylene, benzene, acetone, trichloroethylene, or other organic compounds which have been shown to be virtually unreactive in the formation of photochemical oxidants.

(5) ORGANIC COMPOUND PROGRAM DUE DATES. Organic compound control shall follow the following time schedule:

(a) Existing direct sources in the Southeast Air Region: The department may grant until July 31, 1975 for compliance with limitations in section NR 154.13(4).

(b) New direct sources in the state: Compliance with sections NR 154.13(2) and (4) shall be shown to the department on initial start-up or first use of the source or installation.

STATE OF ARIZONA

Historical Note

Former Section R9-3-405, renumbered eff. Sept. 17, 1975 (Supp. 75-1).

ARTICLE 5. ORGANIC COMPOUND EMISSIONS FROM STATIONARY SOURCES

R9-3-501. Storage of volatile organic compounds

A. No person shall place, store or hold in any reservoir, stationary tank or other container having a capacity of 65,000 or more gallons any gasoline or any petroleum distillate having a vapor pressure of 2.0 pounds per square inch absolute or greater under actual storage conditions, unless such tank, reservoir, or other container is a pressure tank maintaining working pressure sufficient at all times to prevent hydrocarbon vapor or gas loss to the atmosphere, or is equipped with one of the following vapor loss control devices, properly installed, in good working order and in operation:

1. A floating roof consisting of a pontoon type of double-deck type roof resting on the surface of the liquid contents and equipped with a closure seal to close the space between the roof eave and tank well, a vapor balloon or vapor dome, designed in accordance with accepted standards of the petroleum industry. The control equipment shall not be used if the gasoline or petroleum distillate has a vapor pressure of 12 pounds per square inch absolute or greater under actual storage conditions. All tank gauging and sampling devices shall be gas-tight except when gauging or sampling is taking place.
2. Other equipment proven to be of equal efficiency for preventing discharge of hydrocarbon gases and vapors to the atmosphere.

(The next page is 22.)

B. Any other petroleum storage tank which is constructed or extensively remodeled on or after the effective date of these regulations shall be equipped with a submerged filling device or acceptable equivalent for the control of hydrocarbon emissions.

Amended Reg. 3-73.

R9-3-502. Loading of volatile organic compounds

All facilities for dock loading of petroleum products, having a vapor pressure of 1.5 pounds per square inch absolute or greater at loading pressure, shall provide for submerged filling or acceptable equivalent for control of hydrocarbon emissions.

Amended Reg. 3-73.

R9-3-503. Pumps and compressors

All pumps and compressors which handle volatile organic compounds shall be equipped with mechanical seals or other equipment of equal efficiency to prevent the release of organic contaminants into the atmosphere.

Amended Reg. 3-73.

R9-3-504. Organic solvents: other volatile compounds

Materials such as solvents or other volatile compounds including but not limited to paints, acids, alkalies, pesticides, fertilizer and manure, shall be processed, stored, used and transported in such a manner and by such means that they will not unreasonably evaporate, leak, escape or be otherwise discharged into the ambient air so as to cause or contribute to air pollution; and where means are available to reduce effectively the contribution to air pollution from evaporation leakage or discharge, the installation and use of such control methods, devices or equipment shall be required.

Amended Reg. 3-73.

R9-3-505. Gasoline volatility testing and control program

A. This regulation states the required properties of gasoline at the time and place of delivery in bulk in accordance with ASTM designation: D439-70, standard specification for gasoline. For purposes of this regulation, "in bulk" means gasoline transferred or stored prior to delivery to a retail seller.

B. Automatic variation by the seller is provided to meet the requirements of seasonal changes in temperature, depending upon the season and the locality in which the product is to be used. This is done by providing four volatility grades, A., B., C., and D., as defined in D439-70 and differentiating the use of these grades according to the months of the year.

C. The requirements enumerated in this regulation are based upon vapor pressure and shall be determined by ASTM designation: D323-58, standard method of test for vapor pressure of petroleum products (Reid Method). This method of test covers the determination of the absolute vapor pressure of volatile crude oil and volatile non-viscous petroleum products except liquefied petroleum gases.

Historical Note

Former Section R9-3-1007 renumbered eff. Jan. 13, 1976 (Supp. 76-1).

R9-3-506. Gasoline volatility standards

A. The seasonal distribution of the four grades of gasoline (A., B., C., and D.) shall conform to the schedule in Table 2 of D439-70 as follows:

Month	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Grade	D/C	C	C/B	B	B/A	A	A	A	A	A/B	B/C	C/D
Reid Vapor Pressure PSIG, Max	13.5 or 11.5	11.5	11.5 or 10.0	10.5	10.5 or 9.0	9.0	9.0	9.0	9.0	9.0 or 10.0	10.0 or 11.5	11.5 or 13.5

B. Where alternative grades are permitted, the option shall be exercised by the seller.

Historical Note

Former Section R9-3-1008 renumbered eff. Jan. 13, 1976 (Supp. 76-1).

STATE OF COLORADO

Adopted: September 13, 1973
Effective: November 28, 1973
Repealed and Reenacted: October 24, 1974
Effective: April 5, 1975

REGULATION NO. 7

Regulation to Control the Emissions of Hydrocarbon Vapors

A. AFFECTED STATE AREAS

1. Sections F and G shall apply statewide.

2. Sections B, E, H, I, and J, shall apply to all Commission's designated air pollution control areas.

3. Section C, D, and K, shall apply only to the Commission's designated Denver-Metro Air Pollution Control area.

4. All references to designated air pollution control areas throughout this regulation shall be as shown on page 1.23 of the Commission's Regulation No. 1.

B. PETROLEUM DISTILLATE STORAGE

1. The storage of petroleum distillate ("Petroleum Distillate" defined in Common Provisions Regulation) in any stationary tank, reservoir, or other container of more than 40,000 gallons (152,000 liters) shall be in a pressure tank capable of maintaining working pressures sufficient at all times to prevent vapor loss to the atmosphere. Said tank, reservoir, or other container shall be equipped with one or more of the following, properly installed, in good working order and properly maintained:

   a. A pontoon-type or double-deck-type floating roof, or internal floating cover, which shall rest on the surface of the liquid contents and shall be equipped with a closure seal or seals to close the space between the roof edge and tank wall. This control equipment shall be acceptable for said tanks, reservoirs, or other containers only if the petroleum distillate stored therein has a vapor pressure not exceeding 11 pounds per square inch absolute (568mm.Hg.) under actual storage conditions. All gauging or sampling devices shall be vapor-tight, except when tank gauging or sampling is taking place; or

b. A vapor gathering system capable of collecting the hydrocarbon vapors discharged, together with a vapor recovery or disposal system capable of processing such vapors so as to prevent their emission to the atmosphere. All gauging and sampling devices shall be vapor-tight except when gauging or sampling is taking place.

c. Other equipment of equal control efficiency, provided the design and effectiveness of such equipment as documented is submitted to and approved by the Division.

2. This Section B shall also apply to the storage of crude oil within the designated Denver-Metro air pollution control area.

3. Propane or butane and similar products shall be stored in pressure tanks maintaining working pressures sufficient at all times to prevent hydrocarbon vapor loss to the atmosphere, or at refrigerated low temperature, or in low pressure storage equipped with vapor collection and compression equipment designed to prevent the loss of hydrocarbon vapor to the atmosphere.

C. PETROLEUM DISTILLATE TRANSFER

1. Tank trucks, trailers, railroad tank cars, and other transport vehicle loading:

a. The loading of any type of petroleum distillate into any tank truck, trailer, railroad tank car, or other transport vehicle shall be from a loading facility equipped with a vapor collection and disposal system or its equivalent, properly installed, in good working order, and properly maintained. A means shall be provided to prevent drainage of petroleum distillate from the loading device when it is removed from any tank truck, trailer, railroad tank car, or other transport vehicle, or to accomplish complete draining before the removal. All loading and vapor lines shall be equipped with fittings which make vapor-tight connections and which close when disconnected. Procedures and systems at the loading facility shall insure that the transport vehicle and the loading facility vapor collection systems remain vapor-tight at all times and that all displaced vapor and air is directed into the vapor recovery or disposal unit. Vehicle hatches may not be opened for the purpose of making the vapor tight connection except when preparing to load a railroad tank car for delivery to a location outside the control area.

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b. Vapor recovery or disposal may be accomplished by one or more of the following:

(i) A vapor-liquid absorber system where final vapor emission to the atmosphere does not exceed 1.24 pounds per 1,000 gallons loaded.

(ii) A vapor handling system which directs all vapors to a fuel gas system.

(iii) Other equipment, as approved by the Division pursuant to Regulation No. 3, where final vapor emissions to the atmosphere do not exceed 1.24 pounds per 1,000 gallons loaded.

c. A petroleum distillate storage or transfer facility that receives inbound loads and dispatches outbound loads by road or rail vehicles is commonly called a "bulk plant." Such a facility need not comply with the provisions of Section C.1.a when loading vehicles which only serve locations exempted by Sections C.2.a or C.2.f if the following conditions are met:

(i) It never loads outbound more than 20,000 gallons of petroleum distillate in any given calendar day.

(ii) It is designed, operated and maintained to capture and return all vapors and air displaced in the inbound loading process to the delivery vehicle. The delivery vehicle must in turn be refilled only at a location equipped with a vapor recovery or disposal unit for processing the captured vapors.

d. Transfer facilities and vehicles exempted from vapor control are nevertheless required to load petroleum distillate by telescoping top-loading equipment, or a demonstrated equivalent to provide 97% submerged fill.

2. Stationary Storage Container Loading From Vehicles:

a. No person shall transfer petroleum distillate from any delivery vessel or transport vehicle into any above ground or underground storage container with a nominal or manufacturer's stated capacity greater than 550 gallons unless such container is equipped with a submerged fill pipe and unless the displaced vapors from the storage container are either contained or are processed by a system that does not allow final emissions to the atmosphere to exceed 1.15 pounds per 1,000 gallons loaded of organic compounds in said vapors displaced from the stationary container location.

b. The vapor containment or recovery portion of the system required in this subsection 2 shall include one or more of the following:

  (i) A vapor-tight return line from the storage container to the delivery vessel and a system that will insure that the vapor return line is connected before petroleum distillate can be transferred into the container.

  (ii) Refrigeration-condensation system or equivalent designed so as not to allow final emissions to the atmosphere to exceed 1.15 pounds per 1,000 gallons loaded of organic compounds in the displaced vapor.

c. If a "vapor-tight return" system (C.2.b.(i)) is used to meet the requirements of this Section C, the system shall be so constructed as to be readily amenable to retrofit with an adsorption system, refrigeration-condensation system, or equivalent vapor removal system, and so constructed as to anticipate compliance with C.2.a.

d. Storage vessel vapor recovery systems shall be designed to control vapor growth emissions resulting from storage temperatures exceeding ambient conditions where such design is necessary to insure that emissions to the atmosphere do not exceed the allowable rates contained in Section C.

e. The vapor-laden delivery vessel shall be subject to the following conditions:

(i) The delivery vessel must be so designed and maintained and operated so as to be vapor-tight at all times.

(ii) The vapor-laden delivery vessel may be refilled only at facilities equipped as required by Section C.1.a and b of this regulation and is not permitted to be refilled at facilities mentioned in Section C.1.c.

(iii) Storage compartments of 1,000 gallons nominal or manufacturer's stated capacity or less in delivery vehicles in use on the promulgation date of this regulation will not be required to be retrofitted with a vapor return system until January 1, 1977.

(iv) Vehicles presently in operation in the control area which only service locations specifically exempted from the requirements of this regulation need not be retrofitted to comply with the provisions of the regulation, if loaded only at a C.1.c facility.

f. The provisions of this paragraph 2 shall not apply to the following:

(i) Any container having a nominal or manufacturer's stated capacity no greater than 2,000 gallons installed prior to November 7, 1973.

(ii) Transfer made to storage tanks equipped with floating roofs or their equivalent.

3. Transfer Losses From The Filling Of Vehicle Tanks:

a. No person shall transfer petroleum distillate to an automotive fuel tank from a dispensing system connected to a container not exempted by Sections C.2.a or C.2.f unless the transfer is made through a fill nozzle designed and operated to:

(i) Prevent discharge of hydrocarbon vapors to the atmosphere from either the vehicle filler neck or dispensing nozzle;

(ii) Direct vapor displaced from the automotive fuel tank to a system where final emissions to the atmosphere are not allowed to exceed 1.10 pounds per 1,000 gallons loaded and wherein displaced vapors are contained or recovered; and

(iii) Prevent automotive fuel tank over-fills or spillage on fill nozzle disconnect.

b. The system referred to in paragraph C.3.a(ii) above may consist of a vapor-tight return line from the fill nozzle-filler neck interface to the dispensing tank or to an adsorption, absorption, incineration, refrigeration-condensation system or equivalent.

c. Components of the systems required by C.2.e may be used for compliance with paragraph a of this Section.

d. If it is demonstrated to the satisfaction of the Division that it is impractical to comply with the provisions of paragraph a of this Section as a result of vehicle filler neck configuration, location, or other design features, the provisions of this paragraph shall not apply to such vehicles. However, in no case shall such configuration exempt any petroleum distillate dispensing facility from installing a system required by paragraph a.

4. Compliance Dates:

a. Compliance with this Section C will be in accordance with the increments of progress defined in Section II.J of the Commission's Common Provisions Regulation.

b. Pursuant to this Section C and Regulation No. 3, all control plans must be submitted by March 1, 1975* except for Section C.3 for which the control plan submittal date shall be May 1, 1975.

c. Final compliance with the subsections of this Section C must be accomplished on or before the following dates:

(i) Pursuant to C.1 of this regulation - May 31, 1975

(ii) Pursuant to C.2 of this regulation - March 1, 1976

(iii) Pursuant to C.3 of this regulation - May 31, 1977

(iv) Facilities which never load more than 20,000 gallons of petroleum distillate in any given day shall have until January 1, 1977, to reach final compliance with the provisions of this regulation.

D. WATER SEPARATION FROM PETROLEUM PRODUCTS:

1. Single or multiple compartment oil and effluent water separation equipment which receives effluent water containing 200 gallons (760 liters) or more a day of any petroleum product or mixture of petroleum products from any equipment used for processing, refining, treating, storing, or handling of petroleum products having a Reid vapor pressure of 0.5 pound or greater, shall be equipped with one or more of the following vapor loss control devices, properly installed, in good working order, and properly maintained:

    a. A solid cover with all openings sealed and the liquid contents totally enclosed. All gauging and sampling devices shall be vapor-tight except when gauging or sampling is taking place.

    b. A pontoon-type or double deck-type floating roof, or internal floating cover, resting on the surface of the contents and equipped with a closure seal or seals to close the space between the roof edge and container wall. All gauging and sampling devices shall be vapor-tight except when gauging or sampling is taking place.

    c. A vapor recovery system consisting of a vapor gathering system capable of collecting the hydrocarbon vapors discharged and a vapor disposal system capable of processing such hydrocarbon vapors so as to prevent their emission to the atmosphere. All container gauging and sampling devices shall be vapor-tight, except when gauging or sampling is taking place.

    d. Other equipment of equal or greater efficiency, provided the design and effectiveness of such equipment as documented is submitted to and approved by the Division.

2. This Section D shall also apply to oil and effluent water separators used in conjunction with the production of crude oil.

E. PUMPS AND COMPRESSORS:

1. No person may build, install, or permit the building or installation of any rotating pump or compressor handling any type of petroleum distillate unless said pump or compressor is equipped with mechanical seals or other equipment of equal efficiency. If reciprocating-type pumps and compressors are used, they shall be equipped with packing glands properly installed, in good working order, and properly maintained so no emissions occur from the drain recovery systems.

2. This Section E shall also apply to pumps and compressors handling crude oil within the designated Denver-Metro air pollution control area.

F. WASTE GAS DISPOSAL:

Any waste gas stream containing hydrocarbon compounds from a polymer synthesis process emission source shall be burned at 1,300°F (704°C.) for 0.3 second or longer, in a direct flame afterburner or an equally effective device. The emissions of hydrocarbon vapors from a vapor blowdown system or emergency relief shall be burned in smokeless flares, or equipment of equal efficiency, provided the design and effectiveness of equipment, as documented, is submitted to and approved by the Division.

G. ORGANIC SOLVENTS:

1. No person may discharge into the atmosphere more than 15 pounds of organic materials in any one day, nor more than 3 pounds thereof in any one hour, from any article, machine, equipment or other contrivance in which any organic solvent or any material containing organic solvent comes in contact with flame or is baked, heat-cured, or heat-polymerized, in the presence of oxygen, unless said discharge has been reduced by at least 85 percent. Those portions of any series of articles, machines, equipment, or other contrivances designed for processing a continuous web, strip, or wire which emit organic materials and use operations described in this subsection 1 shall be collectively subject to compliance with this subsection 1.

2. No person may discharge into the atmosphere more than 40 pounds of organic materials in any one day, nor more than 8 pounds in any one hour, from any article, machine, equipment, or other contrivance used under conditions other than described in subsection 1 for employing, or applying, any photochemically reactive solvent, as defined in subsection 10 of this Section G, or material containing such photochemically reactive solvent, unless said discharge has been reduced by at least 85 percent. Emissions of organic materials into the atmosphere resulting from air or heated drying of products for the first 12 hours after their removal from any article, machine, equipment, or other contrivance described in this Section G shall be included in determining compliance with this subsection 2. Emissions resulting from baking, heat-curing, or heat-polymerizing as described in subsection 1 of this Section G shall be excluded from determination of compliance with this subsection 2. Those portions of any series of articles, machines, equipment, or other contrivance designed for processing a continuous web, strip, or wire which emit organic materials and use operations described in this subsection 2 shall be collectively subject to compliance with this subsection 2.

3. No person may, after December 31, 1974, discharge into the atmosphere more than 3,000 pounds of organic materials in any one day, nor more than 450 pounds in any one hour, from any article, machine, equipment or other contrivance in which any non-photochemically reactive organic solvent or any material containing such solvent is employed or applied, unless said discharge has been reduced by at least 85 percent. Emissions of organic materials into the atmosphere resulting from air or heated drying of products for the first 12 hours after their removal from any article, machine, equipment, or other contrivance described in this subsection 3 shall be included in determining compliance with this subsection 3. Emissions resulting from baking, heat-curing, or heat-polymerizing as described in subsection 1 of this Section G shall be excluded from determination of compliance with this subsection. Those portions of any series of articles, machines, equipment, or other contrivance designed for processing a continuous web, strip, or wire which emit organic materials and use operations described in this subsection 3 shall be collectively subject to compliance with this subsection 3.

4. Emissions of organic materials to the atmosphere from the clean-up, with photochemically reactive solvent as defined in subsection 10 of this Section G, of any article, machine, equipment, or other contrivance described in subsections 1, 2, or 3, of this Section G shall be included with the other emissions of organic materials being that article, machine, equipment, or other contrivance for determining compliance with this Section G.

5. Emissions of organic materials into the atmosphere required to be controlled by subsections 1, 2, and 3 of this Section G shall be reduced by:

   a. Incineration, provided that 90 percent or more of the carbon in the organic material being incinerated is oxidized to carbon dioxide,

   b. Adsorption, or

   c. Processing in a manner to be not less efficient than a or b above, provided said processing and equipment, as documented, is submitted to and approved by the Division.

6. A person incinerating, adsorping or otherwise processing pursuant to this Section G shall provide, properly installed, in good working order, and properly maintained devices as specified in the authority to construct and the permit to operate, or as otherwise specified by the Division, for indicating temperatures, pressures, rates of flow, or other operating conditions necessary to determine the degree and effectiveness of air pollution control.

7. Any person using organic solvents or any materials containing organic solvents shall supply the Division, upon request and in the manner and form prescribed by it, written evidence of the chemical composition, physical properties, and amount consumed for each organic solvent used.

8. The provisions of this Section G shall not apply to:

a. The manufacture of organic solvents, or the transport or storage of organic solvents or materials containing organic solvents.

b. The use of equipment for which other requirements are specified by Sections B, C, and D of this regulation, or which are exempt from air pollution control requirements.

c. The spraying or other employment of insecticides, pesticides, or herbicides.

d. The employment, application, evaporation, or drying of saturated halogenated hydrocarbons and perchloroethylene.

e. The employment, application, evaporation or drying of trichloroethylene, provided the emission or organic materials is controlled to less than 40 pounds per day or 8 pounds per hour.

f. The use of any material, in any existing article, machine, equipment or other contrivance described in subsections 1, 2, 3, or 4 of this Section G; or the use of any material in any new or substantially modified article, machine, equipment, or other contrivance described in these sections, if the organic solvent or any material containing organic solvent does not come into direct contact with flame, and if the total volatile content of the material is not photochemically reactive as defined in subsection 10 of this Section G and it meets any one of the following conditions:

(i) The total volatile content contains not more than 30% by volume organic solvent, until July 1, 1977 and 20% thereafter, and the remainder consists only of water, or

(ii) the total volatile content does not exceed 30% by volume, until July 1, 1977 and 20% thereafter, and a substantial portion of which evaporates before reaching the first heated zone, or

(iii) The total volatile content does not exceed 5% by volume.

9. For the purposes of this Section G, organic solvents include diluents and thinners and are defined as organic materials which are liquids at standard conditions and which are used as dissolvers, viscosity reducers or cleaning agents, except that such materials which exhibit a boiling point higher than 220°F at 0.5 millimeter mercury absolute pressure or having an equivalent vapor pressure shall not be considered to be solvents unless exposed to temperatures exceeding 220°F.

10. For the purposes of this Section G, a photochemically reactive solvent is any solvent with an aggregate of more than 20 percent of its total volume composed of the chemical compounds classified below or which exceeds any of the following individual percentage composition limitations, referred to the total volume of solvent.

   a. A combination of hydrocarbons, alcohols, aldehydes, esters, ethers, or ketones having an olefinic or cyclo-olefinic type of unsaturation: 5 percent;

   b. A combination of aromatic compounds with eight or more carbon atoms to the molecule, except ethylbenzene: 8 percent;

   c. A combination of ethylbenzene, ketones having branched hydrocarbon structures, trichloroethylene or toluene: 20 percent.

   Whenever any organic solvent or any constituent of an organic solvent may be classified from its chemical structure into more than one of the above groups of organic compounds, it shall be considered as a member of the most reactive chemical group; that is, that group having the least allowable percent of the total volume of solvents.

11. For the purposes of this Section G, organic materials are defined as chemical compounds of carbon excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides, metallic carbonates, and ammonium carbonate.

   For the purpose of this Section G the terms "baked, heat cured, or heat polymerized" refer to coatings and other organic solvent containing materials which:

   a. have been heated in devices in which the air temperature exceeds 175°F (80°C), and

   b. which have become insoluble in solvents in which they were soluble before being subjected to heat.

H. ARCHITECTURAL COATINGS:

1. No person may sell or offer for sale for use in containers of one quart capacity or larger, any architectural coating containing photochemically reactive solvent, as defined in subsection 10 of Section G of this regulation.

2. No person may employ, apply, evaporate or dry any architectural coating, purchased in containers of one quart capacity or larger, containing photochemically reactive solvent, as defined in subsection 10 of Section G of this regulation.

3. No person may thin or dilute any architectural coating with a photochemically reactive solvent, as defined in subsection 10 of Section G of this regulation.

4. For the purposes of this Section H an architectural coating is defined as coating used for residential or commercial buildings and their appurtenances, or industrial buildings.

I. DISPOSAL AND EVAPORATION OF SOLVENTS:

No person may, during any one day, dispose of a total of 1 quart capacity or larger, any photochemically reactive solvent as defined in subsection 10 of Section G of this regulation, or of any material containing 1 quart or more of any such photochemically reactive solvent by any means which will permit the evaporation of such solvent into the atmosphere.

J. DRYCLEANING SOLVENTS:

1. No person may operate a drycleaning operation using photochemically reactive solvents unless the uncontrolled organic vapor emissions from such operation have been reduced by at least 85 percent. Drycleaning operations using photochemically reactive solvents less than 3 pounds per hour and less than 15 pounds per day of uncontrolled organic vapors are exempt from this Section J.

2. Any owner or operator of a source subject to this Section J shall achieve compliance with the requirements of subsection 1 of this Section J by discontinuing the use of photochemically reactive solvents as defined in subsection 10 of Section G of this regulation.

3. If incineration is used as a control technique, 90 percent or more of the carbon in the organic compounds being incinerated must be oxidized to carbon dioxide.

K. DEGREASING OPERATIONS:

No person may use for a degreasing operation any photochemically reactive solvent as defined in subsection 10 of Section G of this regulation unless the emission of organic materials is controlled to less than 40 pounds per day or 8 pounds per hour.

L. EFFECTIVE DATE:

This regulation shall repeal and reenact the original Regulation No. 7 as effective November 28, 1973 as to new sources of hydrocarbon vapor emissions, and December 31, 1974 as to existing sources. Except as otherwise stated hereinabove and insofar as the limitations prescribed for photochemically reactive common solvents specified on page 7.13 shall not have retroactive application to persons whose use exceeds such applicable limits in which case required submissions shall be filed no later than March 1, 1975, compliance schedules and permit applications for existing sources affected by this regulation must have been received by the Division by no later than March 1, 1974.

(See next page for "Photochemical Reactivity of Common Solvents" which pertain to this regulation)

PHOTOCHEMICAL REACTIVITY OF COMMON SOLVENTS
Pertaining to Regulation No. 7

S	Acetone
A	Allyl Glycidyl Ether
S	Amyl Acetate
S	Amyl Alcohol
S	Benzene
S	Borneol
S	n-Butyl Acetate
S	sec-Butyl Acetate
S	n-Butyl Alcohol
S	sec-Butyl Alcohol
S	Butyl Carbitol Acetate
S	Butyl Glycidyl Ether
S	Cellosolve Acetate
S	Chlorobenzene
S	Cyclohexane
S	Cyclohexanol
S	Cyclohexanone
C	Diacetone Alcohol
S	Dichlorobenzene
S	Diethylene Glycol n-Butyl Ether
S	Diethylene Glycol Monoethyl Ether
S	Diethylene Glycol Monomethyl Ether
S	Diethyl Ketone
S	Diisobutyl Carbinol
C	Diisobutyl Ketone
S	Dimethylformamide
B	Dimethyl Phthalate
B	Dioctyl Phthalate
S	Dioxane
A	Dipentene
S	Ethyl Acetate
S	Ethyl Alcohol
S	Ethyl n-Amyl Ketone
C	Ethylbenzene
S	Ethyl Butyl Carbinol
S	Ethyl n-Butyl Ketone
S	Ethylene Dichloride *
S	Ethylene Glycol n-Butyl Ether
S	Ethylene Glycol Monobutyl Ether
S	Ethylene Glycol Monoethyl Ether
S	Ethylene Glycol Monethyl Ether Acetate
S	Ethylene Glycol Monomethyl Ether
S	2-Ethylhexyl Acetate
S	2-Ethylhexyl Alcohol
S	Glycol Diacetate
B	Glycol Monophenyl Ether
S	Heptane
S	Hexane
B	Indan
S	Isobutyl Acetate
S	Isobutyl Alcohol
S	Isobutyl Isobutyrate
S	Isooctane
A	Isophorone
S	Isopropyl Acetate
S	Isopropyl Alcohol
A	Limonene
A	Methadiene
A	Mesityl Oxide
C	4-Methoxy-4-Methyl-Pentanone-2
S	Methyl Acetate
S	Methyl Amyl Acetate
S	Methyl Amyl Alcohol
S	Methyl n-Butyl Ketone
S	Methyl Carbitol
S	Methyl Cellosolve Acetate
S	Methyl Chloroform
S	Methylene Chloride*
S	Methyl Ethyl Ketone
S	Methyl n-Heptyl Ketone
C	Methyl Isoamyl Ketone
S	Methyl Isobutyl Carbinol
C	Methyl Isobutyl Ketone
S	Methyl n-Propyl Ketone
S	Monochlorobenzene
S	2-Nitropropane
S	Orthodichlorobenzene
C	Pentoxone
S	Perchloroethylene*
B	Phenyl Cellosolve
S	n-Propyl Acetate
S	Propylene Glycol Methyl Ether
S	Rubber Solvent
A	Styrene
A	Terpene
A	Terpineol
S	Tetrahydorfuran
S	Tetrachloroethylene *
C	Toluene
C	Trichloroethylene*
S	1,1,1,-Trichloroethane*
S	Tripropylene Glycol Methyl Ether
S	Trichlorofluoromethane*
A	Turpentine
B	Xylene

S - Solvent may be used in all percentages
A - Limited to 5% by volume by section G.10(a)
B - Limited to 8% by volume by section G.10(b)
C - Limited to 20% by volume by section G.10(c)

Note: Section G.10 also limits the percent by volume of A+B+C to a maximum of 20% of the solvent system.

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*See Section G.8.d for special conditions for these solvents

STATE OF CONNECTICUT

Sec. 19-508-20. Control of organic compound emissions

(a) Storage of volatile organic compounds. (a) (1) No person shall place, store, or hold in any stationary tank, reservoir or other container of more than 40,000 gallons (150,000 liters) capacity any volatile organic compounds unless such tank, reservoir, or other container is a pressure tank capable of maintaining working pressures sufficient at all times to prevent vapor or gas loss to the atmosphere or is designed, and equipped, with one of the following vapor loss control devices:

(i) A floating roof, consisting of a pontoon type, double deck type roof or internal floating cover, which will rest on the surface of the liquid contents and be equipped with a closure seal or seals to close the space between the roof edge and tank wall. This control equipment shall not be permitted if the volatile organic compounds have a vapor pressure of 11.0 pounds per square inch absolute (568 mm. Hg.) or greater under actual storage conditions. All tank gauging or sampling devices shall be gas-tight except when tank gauging or sampling is taking place.

(ii) A vapor recovery system, consisting of a vapor gathering system capable of collecting the volatile organic compounds vapors and gases discharged, and a vapor disposal system capable of processing such volatile organic vapors and gases so as to prevent their emission to the atmosphere, and with all tank gauging and sampling devices gas-tight except when gauging or sampling is taking place.

(iii) Other equipment or means of equal efficiency for purposes of air pollution control as may be approved by the Commissioner.

(a) (2) Subsection (a) (1) shall not apply to existing gasoline retail facilities, construction of which has been commenced prior to June 1, 1972.

(a) (3) No person shall place, store, or hold in any stationary storage vessel of more than 250-gallon (950 liter) capacity any volatile organic compound unless such vessel is equipped with a permanent submerged fill pipe or is a pressure tank as described in subsection (a)(1) or is fitted with a vapor recovery system as described in subsection (a)(1)(ii).

(a) (4) The provisions of subsection (a) (3) shall not apply to the loading of volatile organic compounds into any storage vessel having a capacity of less than 1,000 gallons which was installed prior to the effective date of this section, nor to any underground storage vessel installed prior to the effective date of this section where the fill line between the fill connection and the storage vessel is offset.

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(b) **Volatile organic compounds loading facilities.** (b) (1) No person shall load or permit the loading of any volatile organic compounds into any tank truck, tank trailer, or railroad tank car having a capacity in excess of 200 gallons (760 liters) from any loading facility unless such loading facility is equipped with a vapor collection and disposal system or its equivalent, properly installed, in good working order, and in operation.

(b) (2) No person shall load or permit the loading of any volatile organic compounds into any tank truck, tank trailer, or railroad tank car having a capacity in excess of 200 gallons (760 liters) unless such loading facility is equipped with a loading arm with a vapor collection adaptor, pneumatic, hydraulic, or other mechanical means to force a vapor-tight seal between the adaptor and the hatch. A means shall be provided to prevent liquid organic compounds drainage from the loading device when it is removed from the hatch of any tank, truck, or trailer, or to accomplish complete drainage before such removal. When loading is effected through means other than hatches, all loading and vapor lines shall be equipped with fittings which make vapor-tight connections and which close automatically when disconnected.

(b) (3) Subsections (b) (1) and (b) (2) shall apply only to the loading of volatile organic compounds at a facility from which at least 10,000 gallons of such organic compounds are loaded in any one day. "Loading facility," for the purpose of this subsection, shall mean any aggregation or combination of organic liquid loading equipment which is both (i) possessed by one person and (ii) located so that all the organic liquid loading outlets for such aggregation or combination of loading equipment can be encompassed within any circle of three hundred (300) feet in diameter.

(c) **Volatile organic compound water separation.** No person shall use any compartment of any single or multiple compartment volatile organic compound waste water separator which receives effluent water containing 200 gallons (760 liters) a day or more of any volatile organic compound from any equipment processing, refining, treating, storing, or handling volatile organic compounds consisting of kerosene or more volatile organic materials unless such compartment is equipped with one of the following vapor loss control devices, properly installed, in good working order, and in operation:

(1) A container having all openings sealed and totally enclosing the liquid contents. All gauging and sampling devices be gas-tight except when gauging or sampling is taking place.

(2) A container equipped with a floating roof, consisting of a pontoon type, double deck type roof, or internal floating cover, which will rest on the surface of the contents and be equipped with a closure seal or seals to

close the space between the roof edge and container wall. All gauging and sampling devices shall be gas-tight except when gauging or sampling is taking place.

(3) A container equipped with a vapor recovery system consisting of a vapor gathering system capable of processing such organic vapors and gases so as to prevent their emission to the atmosphere and with all container gauging and sampling devices gas-tight except when gauging or sampling is taking place.

(4) A container having other equipment of equal efficiency for purposes of air pollution control as may be approved by the Commissioner or equipment which meets the requirements of subsections (f) (1) through (4) inclusive.

(d) **Pumps and compressors.** All pumps and compressors handling volatile organic compounds shall have mechanical seals or other equipment of equal efficiency for purposes of air pollution control as may be approved by the Commisssioner, except that in cases where mechanical seals are impractical because of the abrasive or corrosive nature of the liquid handled, best available technology for the reduction of organic compound emissions shall be deemed equivalent to the use of mechanical seals.

(e) **Waste gas disposal.** (e) (1) No person shall cause or permit any emission from any ethylene producing plant or other ethylene emission source unless the waste gas stream is properly burned at 1300° F. (104° C) for 0.3 second or greater in a direct-flame afterburner or an equally effective device as approved by the Commissioner. This provision shall not apply to emergency reliefs and vapor blowdown systems.

(e) (2) No person shall cause or permit the emission of organic gases from a vapor blowdown system or emergency relief unless these gases are burned by smokeless flares or an equally effective control device as approved by the Commissioner. Exemption to this section will be considered when the frequency of venting and the quantity of potential release are low, and all occurrences are reported to the Commissioner. In the case of emergency reliefs, exemption will also be considered if the Commissioner determines that addition of control equipment would constitute an explosion hazard or other safety hazard.

(f) **Organic solvents.** (f) (1) No person shall cause or permit the discharge into the atmosphere of more than 15 pounds of organic materials in any one day, nor of more than 3 pounds in any one hour, from any article, machine, equipment or other contrivance, in which any organic solvent or any material containing organic solvent comes into contact with flame or is baked, heat-cured or heat-polymerized, in the presence of oxygen, unless said discharge has been reduced by at least 85 percent. Those portions of any series of articles, machines, equipment or

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other contrivances designed for processing a continuous web, strip or wire which emit organic materials and using operations described in this subsection shall be collectively subject to compliance with this subsection.

(f) (2) No person shall cause or permit the discharge into the atmosphere of more than 40 pounds of organic materials in any one day, nor of more than 8 pounds in any one hour, from any article or machine, other than described in subsection (f) (1), for employing or applying any photochemically reactive solvent, as defined in subsections (i) (1) and (i) (2), or material containing such photochemically reactive solvent, unless said discharge has been reduced by at least 85 percent. Emissions of organic materials into the atmosphere resulting from air or heated drying of products for the first 12 hours after their removal from any article, machine, equipment, or other contrivance described in this subsection shall be included in determining compliance with this subsection. Emissions resulting from baking, heat-curing, or heat-polymerizing as described in subsection (f) (1) shall be excluded from determination of compliance with this subsection. Those portions of any series of articles, machines, equipment or other contrivances designed for processing a continuous web, strip or wire which emit organic materials and using operations described in this subsection shall be collectively subject to compliance with this subsection.

(f) (3) On or after January 1, 1975, the discharge of photochemically reactive solvents described in subsection (f) (2) shall be limited to 15 pounds in any day or 3 pounds in any hour, unless such discharge has been reduced by 85 percent.

(f) (4) On or after June 1, 1973, no person shall cause or permit the discharge into the atmosphere of more than 800 pounds of organic materials in any one day, nor more than 160 pounds in any one hour, from any article, machine, equipment or other contrivance in which any non-photochemically reactive organic solvent or any material containing such solvent is employed or applied, unless said discharge has been reduced by at least 85 percent. Emissions of organic materials into the atmosphere resulting from air or heated drying of products for the first 12 hours after their removal from any article, machine, equipment, or other contrivance described in this subsection shall be included in determining compliance with this subsection. Emissions resulting from baking, heat-curing, or heat-polymerizing as described in subsection (f) (1) shall be excluded from determination of compliance with this subsection. Those portions of any series of articles, machines, equipment or other contrivances designed for processing a continuous web, strip or wire which emit organic materials and using operations described in this subsection shall be collectively subject to compliance with this subsection.

(f) (5) Emissions of organic materials to the atmosphere from the cleanup with photochemically reactive solvent, as defined in subsections (i) (1) and (i) (2), of any article, machine, equipment or other contrivance described in subsections (f) (1) through (f) (4) inclusive shall be included with the other emissions of organic materials from that article, equipment or other contrivance for determining compliance with this subsection.

(f) (6) Emissions of organic materials required to be controlled by subsections (f) (1) through (f) (4) inclusive shall be reduced by:

(i) Incineration, provided that 90 percent or more of the carbon in the organic material being incinerated is oxidized to carbon dioxide. However, incineration is not acceptable for halogenated hydrocarbons.

(ii) Adsorption, or

(iii) Processing in a manner determined by the Commissioner to be not less effective than (i) or (ii) above.

(iv) Substitution of organic solvents which have been shown to be virtually unreactive or of low reactivity in the formation of oxidants. For the purposes of this section, photochemically unreactive solvents include saturated halogenated hydrocarbons, perchlorethylene, benzene, acetone, $C_1 - C_5$ n-paraffins, cyclohexanone, ethyl acetate, isopropyl alcohol, methyl benzoate, 2-nitropropane, phenyl acetate, triethylamine, and other compounds determined by the Commissioner. The Commissioner may, upon submission of evidence satisfactory to him, add or subtract compounds from this list. Notwithstanding the above, substitution as described in this subsection (f) (6) (iv) shall not be acceptable for compliance with subsections (f) (1) and (f) (4).

(f) (7) A person incinerating, adsorbing, or otherwise processing organic materials pursuant to subsection (f) (6) shall provide, properly install, and maintain in calibration, in good working order, and in operation, devices as specified by the Commissioner for indicating temperatures, pressures, rates of flow, or other operating conditions necessary to determine the degree and effectiveness of air pollution control.

(f) (8) Any person using organic solvents or any materials containing organic solvents shall supply the Commissioner, upon request and in the manner and form prescribed by him, written evidence of the chemical composition, physical properties, and amount consumed for each organic solvent used.

(f) (9) The provisions of subsection (f) shall not apply to:

(i) The use of equipment for which other requirements are specified by subsections (a) through (e) inclusive or which are exempt from air pollution control requirements under those subsections.

(ii) The spraying or other employment of insecticides, pesticides, or herbicides.

(f) (10) (i) For the purposes of this section, organic materials are defined as chemical compounds of carbon excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides, metallic carbonates, and ammonium carbonate.

(f) (10) (ii) For the purposes of this section, organic solvents include diluents and thinners and are defined as organic materials which are liquids at standard conditions and which are used as dissolvers, viscosity reducers or cleaning agents, except that such materials which exhibit a boiling point higher than 220°F at 0.5 millimeter mercury absolute pressure or having an equivalent vapor pressure shall not be considered to be solvents unless exposed to temperatures exceeding 220°F.

(f) (10) (iii) For the purpose of subsections (f) (1) and (f) (4), 85 percent reduction of organic materials emissions shall mean 85 percent reduction of total organic materials emissions present when operations are conducted according to good industrial practice.

(f) (10) (iv) For the purpose of subsections (f) (2) and (f) (3), 85 percent reduction of emissions shall mean 85 percent reduction of photochemically reactive solvent emissions present when operations are conducted according to good industrial practice, utilizing the maximum proportion of photochemically reactive solvent appropriate to such good practice. Substitution of a photochemically unreactive solvent shall be considered 100 percent reduction of the photochemically reactive emissions involved.

(g) **Architectural coatings.** (g) (1) On or after January 1, 1974, no person shall sell or offer for sale to the final user in containers greater than 1-quart (0.95 liter) capacity any architectural coating or solvent for the purpose of thinning or diluting any architectural coating unless the solvent composition is photochemically unreactive, as defined in subsection (i) (4).

(g) (2) On or after January 1, 1975, no person shall employ, apply, evaporate, or dry any architectural coating purchased in containers of greater than 1-quart (0.95 liter) capacity unless the solvent composition is photochemically unreactive, as defined in subsection (i) (4).

(g) (3) On or after January 1, 1975, no person shall thin or dilute for application any architectural coating with a photochemically reactive solvent, as defined in subsections (i) (1) and (i) (2), purchased in containers of greater than 1-quart (0.95 liter) capacity.

(h) **Exemptions.** If the Commissioner determines that photochemically unreactive solvents are not available for a particular application or class of applications, he may issue an exemption, provided that this shall not prevent the attainment or maintenance of the national ambient air quality standard for photochemical oxidants.

(i) **Classification of solvents.** (i) (1) The following solvents shall be considered photochemically reactive:

(i) Group R1: Any hydrocarbons, alcohols; aldehydes, esters, ethers, or ketones, having an olefinic or cyclo-olefinic type of unsaturation.

(ii) Group R2: Any aromatic compounds with eight or more carbon atoms to the molecule except ethylbenzene, phenyl acetate, and methyl benzoate.

(iii) Group R3: Any ketones having branched hydrocarbon structures, and ethylbenzene, trichloroethylene, and toluene.

(i) (2) Any solvent mixture will be considered photochemically reactive if the composition of such mixture exceeds any of the following limits by volume:

(i) 5 percent of any combination of chemical compounds in group R1.

(ii) 8 percent of any combination of chemical compounds in group R2.

(iii) 20 percent of any combination of chemical compounds in group R3.

(iv) 20 percent of any combination of chemical compounds in groups R1, R2, and R3.

(i) (3) Whenever any organic solvent or any constituent of any organic solvent may be classified from its chemical structure into more than one of the above groups of organic compounds, it shall be considered a member of the most reactive chemical group, which is, that group having the least allowable percent of the total volume of solvents.

(i) (4) Any solvent not classified in (i) (1) and any solvent mixture which does not exceed any of the limits in (i) (2) shall be considered photochemically nonreactive.

(i) (5) Upon submission of technical evidence concerning the photochemically reactive nature of organic compounds satisfactory to the commissioner, the commissioner may add or subtract compounds from the list of photochemically reactive solvents.

(j) **Disposal and evaporation of solvents.** A person shall not, during any one day, dispose of more than one and one-half gallons (5.7 liters) of any organic solvent or of any material containing more than one and one-half gallons (5.7 liters) of any such organic solvent by any means which will permit the evaporation of such solvent into the atmosphere.

(Effective May 30, 1975)

Part 52 of Chapter 1, Title 40, Code of Federal Regulations, is proposed to be amended as follows:

Subpart H—Connecticut

1. Section 52.370, paragraph (c) is amended by adding paragraph (2) as follows:

§ 52.370 Identification of Plan.

* * * * *

(c) The plan revisions listed below were submitted on the dates specified.

* * * * *

(2) The Connecticut Transportation Control Plan developed by the Department of Environmental Protection was submitted to the Regional Administrator by Governor Grasso on August 10, 1976.

2. Section 52.392 is added to read as follows:

§ 52.392 Regulation of Emissions from Gasoline Dispensing Facilities.

(a) *Definitions*. For the purpose of this section, the following definitions apply:

(1) "Gasoline" means a petroleum distillate having a Reid Vapor Pressure of 4 pounds or greater.

(2) "Delivery vessel" means a tank truck, tank-equipped trailer, railroad tank car, or other mobile source equipped with a storage tank used for the transport of gasoline from sources of supply to stationary storage tanks of gasoline dispensing facilities.

(3) "Submerged fill pipe" means any fill pipe with a discharge opening which is entirely submerged when the pipe normally used to withdraw liquid from the tank can no longer withdraw any liquid.

(4) "Owner" means the person who has equitable title to the gasoline storage tank at a facility.

(5) "Operator" means any person who is a leasee of, or supervises a facility at which gasoline is dispensed.

(6) "Gasoline dispensing facility" means any site where gasoline is dispensed to motor vehicle gasoline tanks from stationary storage tanks.

(7) "Gasoline transfer operation" means a facility where gasoline is received from a bulk terminal and stored

for later delivery to a gasoline dispensing facility.

(8) "Administrator" means the Regional Administrator of the U.S. Environmental Protection Agency, Region I, or his designee.

(9) "Vapor Recovery System" means a system that prevents release to the atmosphere of no less than 90 percent (by weight) of organic compounds in the vapors displaced from a stationary gasoline storage tank during the transfer of gasoline. This system shall include one or more of the following:

(i) A vapor-tight return line from the storage tank to the delivery vessel and a system that will ensure that the vapor return line is connected before gasoline can be transferred into the tank. If a vapor-tight vapor return system is used to meet the requirements of this section, it shall be constructed so that the system may be retrofitted with an adsorption system, refrigeration-condensation system, or equivalent vapor removal system.

(ii) A refrigeration-condensation system or equivalent designed to recover no less than 90 percent by weight of the organic compounds in the displaced vapor.

(b) This section is applicable in the entire State of Connecticut in accordance with the schedule in section (h).

(c) No person shall transfer or allow transfer of gasoline from any delivery vessel into any stationary storage tank included in paragraph (c) (1) (2) or (3) of this section unless the tank is equipped with a submerged fill pipe and less the vapors displaced from the storage tank are processed by a vapor recovery system.

(1) Any tank with a capacity of 2000 gallons or more which is in place prior to the effective date of this regulation located at a gasoline dispensing facility.

(2) Any tank with a capacity of 250 gallons or more which is installed on or after the effective date of this regulation located at a gasoline dispensing facility.

(3) Any tank which is located at a gasoline transfer operation which stores gasoline for delivery to any tanks included in paragraph (c) (1) or (2) of this section.

(d) The vapor-laden delivery vessel shall be subject to the following conditions:

(1) The delivery vessel must be so designed and maintained as to be vapor tight at all times.

(2) The vapor-laden delivery vessel may be refilled only at facilities equipped with a vapor recovery system or the equivalent that can recover at least 90 percent by weight of the organic compounds in the vapors displaced from the delivery vessel during refilling.

(e) Responsibility of Owners. Each owner of a gasoline storage tank covered by paragraphs (b) and (c) hereof shall:

(1) Submit plans and specifications, purchase and install all necessary control systems and make all necessary process modifications in accordance with the schedule in Section (h) hereof;

(2) Provide instructions to the operator of the gasoline dispensing facility, describing necessary maintenance operations and procedures for prompt notification of the owner in case of any malfunctions of the control system;

(3) Repair, replace or modify any worn out or malfunctioning component or element of design and keep records of the repair, replacement or modification of any component or element of design of the control system.

(f) *Responsibility of operators.* Each operator of a gasoline dispensing facility covered by paragraphs (b) and (c) shall:

(1) Maintain and operate the control system in accordance with the specifications and the operating and maintenance procedures specified by the owner;

(2) Promptly notify the owner of the control system of any scheduled maintenance or malfunction requiring replacement or repair of major components of the system;

(3) Maintain records of all maintenance performed by the operator and of all notifications to the owner of any scheduled maintenance or malfunction requiring replacement or repair of major components of the system and the action taken by the owner. Such records shall at a minimum include: the scheduled data for maintenance or the date a malfunction was detected; the date the need for maintenance or malfunction of major system components was reported to the owner; and the date the maintenance was performed or the malfunction corrected by either operator or owner;

(4) Maintain gauges, meters, or other specified testing devices in proper working order.

(g) *Exemptions.* The provisions of this section shall not apply to transfers made to storage tanks equipped with floating roofs or their equivalent.

(h) The owner of any storage tank or delivery vessel subject to the provisions of this section shall install a vapor recovery system in compliance with the increments of progress in the following schedule:

(1) Final control plans for emission control systems or process modifications must be available upon request of the Administrator within two months after final promulgation of these regulations.

(2) Contracts for emission control systems or process modifications must be awarded or orders must be issued, within five months following final promulgation, for the purchase of component parts to accomplish emission control or process modification.

(3) Initiation of onsite construction or installation of process control equipment must begin within seven months following final promulgation.

(4) Onsite construction or installation of emission control equipment or process modifications must be completed within ten months following final promulgation.

(5) Final compliance is to be achieved within one year of final promulgation of these regulations.

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COMMONWEALTH OF MASSACHUSETTS

2.5.4 Organic Material

2.5.4.1 U Any person owning, leasing, or controlling a stationary tank reservoir with a capacity of greater than 40,000 gallons in which organic material having a true vapor pressure in the range of 1.5 to 11 psi inclusive is placed, stored, or held shall equip such a stationary tank reservoir with one of the following emission control devices or equal, within the time schedule specified in Regulation 2.5:

(a) A floating roof cover consisting of a pontoon type, double deck type roof, or internal floating roof resting on the surface of the liquid contents equipped with a closure seal, or seals, to close the space between the roof edge and tank wall and, in addition, all tank gauging and sampling devices shall be gas tight except when in use, or

(b) A pressure tank system maintaining a pressure at all times so as to prevent organic material loss to the atmosphere or

(c) A vapor recovery system capable of collecting the organic materials emitted from the tank and of disposing of these materials without release to the atmosphere and,

(d) Other equipment equal to or greater in efficiency to the devices listed above, and approved by the Department.

2.5.4.2 U Any person owning, leasing, or controlling a stationary tank reservoir with a capacity of greater than 40,000 gallons in which organic material having a true vapor pressure greater than 11 psi is placed, stored, or held shall equip such a stationary tank reservoir with one of the following devices or equal, within the time schedule specified in Regulation 2.5:

(a) A pressure tank system maintaining a pressure at all times so as to prevent organic material loss to the atmosphere or

(b) A vapor recovery system capable of collecting the organic materials emitted from the tank and of disposing of these materials without release to the atmosphere and, in addition, all tank gauging and sampling devices shall be gas tight except when in use or

(c) Other equipment equal to oregreater in efficiency than the devices listed above and approved by the Department.

2.5.4.3 U Any person owning, leasing, or controlling a loading rack with a daily throughput (1/300 of actual annual throughout) greater than 20,000 gallons which transfers organic material with a true vapor pressure of 1.5 psi or greater into tank trucks, trailers, or other contrivances shall equip such a loading rack with a vapor recovery system properly installed, well-maintained, and with a Standard Operating Procedure that has been approved by the Department within the time schedule specified in Regulation 2.5. All loading connections on the vapor lines shall be equipped with fittings which are vapor tight and will automatically and immediately close upon disconnection so as to prevent release of organic material from the fittings. The provisions of this section shall not apply to the loading of motor vehicle fuel tanks.

Regulation 2.5.4.4 - Metropolitan Boston Air Pollution Control District Only
Stationary Tanks (Amended July 1, 1975)

Any person owning, leasing, or controlling a stationary tank having a capacity greater than 250 gallons but less than 40,000 gallons into which motor vehicle fuel with a true vapor pressure of greater than 1.5 psi but less than 11.0 psi @ 60 F. is transferred from tank truck, trailer, or other contrivances shall be equipped as follows:

(a) All tanks over 250 gallons in place as of July 1, 1973 shall be equipped with submerged (drop) fill lines before January 1, 1974. These submerged fill lines shall be of such characteristic that the tanks can be converted to vapor recovery system operation before March 1, 1976 without replacement of the submerged fill line.

(b) All service stations constructed after July 1, 1973, with tanks over 250 gallons capacity shall be equipped with drop tube fill lines and a vapor balance line or equally effective vapor discharge control system at the time of construction. Major components of the vapor balance line shall include a vapor space connection on the tank, a connecting hose, and a compatible vapor return connection on the tank truck or trailer.

Submerged fill lines shall be 3 inches from the bottom of the tank for all tanks installed on and after July 1, 1975 but may be 6 inches from the bottom of the tank for all tanks installed before July 1, 1975.

The vapor recovery return system shall be placed in continuous, efficient operation as soon as the terminal from which the gasoline has been loaded has been equipped with and operates a vapor recovery system or equally efficient system as specified in Regulation 2.5.4.3.

(c) All existing service stations having tanks over 250 gallons capacity replaced, or additional tanks over 250 gallons capacity added after July 1, 1973, shall have all the tanks in the service station equipped with drop tube fill lines and equipped with a vapor balance line or equally effective vapor discharge control system at the time of installation. Major components of the vapor balance line shall include a vapor space connection on the tank, a connecting hose, and a compatible vapor return connection on the tank or trailer.

The vapor recovery return system shall be placed in continuous, efficient operation as soon as the terminal from which the gasoline has been loaded has been equipped with and operates a vapor recovery system or equally efficient system as specified by Regulation 2.5.4.3.

Regulation 2.5.4.4 - B, CM, MV, PV, SM - Stationary Tanks - Submerged Fill Tubes (Amended July 1, 1975)

Any person owning, leasing, or controlling a stationary tank having a capacity greater than 250 gallons but less than 40,000 gallons into which motor vehicle fuel with a true vapor pressure of greater than 1.5 psi but less than 11.0 psi @ 60° F. is transferred from tank truck, trailer, or other contrivances shall be equipped as follows:

All tanks over 250 gallons in place as of July 1, 1975 shall be equipped with submerged (drop) fill lines before January 1, 1976.

All tanks over 250 gallons installed after July 1, 1975 shall be equipped with submerged (drop) fill lines at time of installation.

These submerged fill lines shall be of such characteristic that the tanks can be converted to vapor recovery system operation before March 1, 1976 without replacement of the submerged fill line.

Submerged fill lines shall be 3 inches from the bottom of the tank for all tanks installed on and after July 1, 1975 but may be 6 inches from the bottom of the tank for all tanks installed before July 1, 1975.

§ 52.1144 Regulation on evaporative emissions from retail gasoline outlets.

(a) "Gasoline" means any petroleum distillate having a Reid vapor pressure of 4 pounds or greater.

(b) This section is applicable in the Boston Intrastate Region. The requirements for this section shall be in effect in accordance with 52.1147 of this subpart.

(c)(1) No person shall transfer gasoline from any delivery vessel into any stationary storage container with a capacity greater than 250 gallons unless such container is equipped with a submerged fill pipe and unless the displaced vapors from the storage container are processed by a system that prevents release to the atmosphere of no less than 90 percent by weight of organic compounds in said vapors displaced from the stationary container location.

(i) The vapor recovery portion of the system shall include one or more of the following:

(*a*) A vapor-tight return line from the storage container to the delivery vessel and a system that will ensure that the vapor return line is connected before gasoline can be transferred into the container.

(*b*) A refrigeration-condensation system or equivalent designed to recover no less than 90 percent by weight of the organic compounds in the displaced vapor.

(ii) If a "vapor-tight vapor return" system is used to meet the requirements of this section, the system shall be so constructed as to be readily added on to retrofit with an adsorption system, refrigeration-condensation system, or equivalent vapor removal system, and so constructed as to anticipate compliance with § 52.1144(d)(1).

(iii) The vapor-laden delivery vessel shall be subject to the following conditions:

(*a*) The delivery vessel must be so designed and maintained as to be vapor tight at all times.

(*b*) The vapor-laden delivery vessel may be refilled only at facilities equipped with a vapor recovery system or the equivalent that can recover at least 90 percent by weight of the organic compounds in the vapors displaced from the delivery vessel during refilling.

(2) Gasoline storage compartments of 1,000 gallons or less in gasoline delivery vehicles presently in use on October 15, 1973, will not be required to be retrofitted with a vapor return system until January 1, 1977.

(3) The provisions of this paragraph shall not apply to the following:

(i) Stationary containers having a capacity less than 550 gallons used exclusively for the fueling of implements of husbandry, provided, however, said containers are equipped with submerged fill pipes.

(ii) Any container having a capacity of less than 2,000 gallons installed prior to October 15 1973.

(iii) Transfers made to storage tanks equipped with floating roofs or their equivalent.

(d)(1) A person shall not transfer gasoline to an automotive fuel tank from gasoline dispensing systems unless the transfer is made through a fill nozzle designed to:

(i) Prevent discharge of hydrocarbon vapors to the atmosphere from either the vehicle filler neck or a dispensing nozzle;

(ii) Direct vapor displaced from the automotive fuel tank to a system wherein at least 90 percent by weight of the organic compounds in displaced vapors are recovered; and

(iii) Prevent automotive fuel tank overfills or spillage on fill nozzle disconnect.

(2) The system referred to in paragraph (d)(1) of this section can consist of a vapor-tight vapor return line from the fill nozzle-filler neck interface to the dispensing tank, to an adsorption, absorption, incineration, or refrigeration-condensation system or equivalent.

(3) Components of the system required by paragraph (c)(1) of this section can be used for compliance with this paragraph.

(4) If it is demonstrated to the satisfaction of the Administrator that it is impractical to comply with the provisions of paragraph (d)(1) of this section as a result of fill neck configuration, location, or other design features of a class of vehicles, the provisions of paragraph (d)(1) shall not apply to such vehicles. However, in no case shall such configuration exempt any gasoline dispensing facility from installing a system required by paragraph (d)(1) of this section.

§ 52.1145 Regulation on organic solvent use.

(a) Definitions:

(1) "Organic solvents" include diluents and thinners and are defined as organic materials which are liquids at standard conditions and which are used as dissolvers, viscosity reducers, or cleaning agents, except that such materials which exhibit a boiling point higher than 220° F. at 0.5 millimeters of mercury absolute pressure or having an equivalent vapor pressure shall not be considered to be solvents unless exposed to temperatures exceeding 220° F.

(2) "Solvent of high photochemical reactivity" means any solvent with an aggregate of more than 20 percent of its total volume composed of the chemical compounds classified below or which exceeds any of the following individual percentage composition limitations in reference to the total volume of solvent:

(i) A combination of hydrocarbons, alcohols, aldehydes, esters, ethers, or ketones having an olefinic or cycloolefinic type of unsaturation: 5 percent;

(ii) A combination of aromatic compounds with eight or more carbon atoms to the molecule except ethylbenzene: 8 percent;

(iii) A combination of ethylbenzene, ketones having branched hydrocarbon structures, trichloroethylene or toluene: 20 percent. Whenever any organic solvent or any constituent of an organic solvent may be classified from its chemical structure into more than one of the above groups of organic compounds, it shall be considered as a member of the most reactive chemical group, that is, that group having the least allowable percentage of total volume of solvents.

(3) "Organic materials" are chemical compounds of carbon excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides, metallic carbonates, and ammonium carbonate.

(b) This section is applicable throughout the Boston Intrastate Region. The requirements of this section shall be in effect in accordance with § 52.1147.

(c) No person shall cause, allow, suffer, or permit the discharge into the atmosphere of more than 15 pounds of organic materials in any 1 day, nor more than 3 pounds of organic materials in any 1 hour, from any article, machine, equipment, or other contrivance, in which any organic solvent or any material containing organic solvent comes into contact with flame or is baked, heat-cured, or heat-polymerized, in the presence of oxygen, unless said discharge has been reduced as a result of the installation of abatement controls by at least 85 percent. Those portions of any series of articles, machines, equipment, or other contrivances designed for processing a continuous web, strip, or wire that emit organic materials and use operations described

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in this section shall be collectively subject to compliance with this section.

(d) No person shall cause, suffer, allow, or permit the discharge into the atmosphere of more than 40 pounds of organic materials in any 1 day, nor more than 8 pounds in any 1 hour, from any article, machine, equipment, or other contrivance used under conditions other than described in paragraph (c) of this section for employing, or applying any solvent of high photochemical reactivity or material containing such photochemically reactive solvent, unless said discharge has been reduced as a result of the installation of abatement controls by at least 85 percent. Emissions of organic materials into the atmosphere resulting from air or heated drying of products for the first 12 hours after their removal from any article, machine, equipment or other contrivance described in this section shall be included in determining compliance with this section. Emissions resulting from baking, heat-curing, or heat-polymerizing as described in paragraph (c) of this section shall be excluded from determination of compliance with this section. Those portions of any series of articles, machines, equipment, or other contrivances designed for processing a continuous web, strip, or wire that emit organic materials and use operations described in this section shall be collectively subject to compliance with this section.

(e) Emissions of organic materials to the atmosphere from the clean-up with a solvent of high photochemical reactivity, or any article, machine, equipment, or other contrivance described in paragraph (c) or (d) or in this paragraph, shall be included with the other emissions of organic materials from that article, machine, equipment or other contrivance for determining compliance with this section.

(f) No person shall cause, suffer, allow, or permit during any one day disposal of a total of more than 1.5 gallons of any solvent of high photochemical reactivity, or of any material containing more than 1.5 gallons of any such photochemically reactive solvent by any means that will permit the evaporation of such solvent into the atmosphere.

(g) Emissions of organic materials into the atmosphere required to be controlled by paragraph (c) or (d) of this section shall be reduced by:

(1) Incineration, provided that 90 percent or more of the carbon in the organic material being incinerated is converted to carbon dioxide, or

(2) Adsorption, or

(3) The use of other abatement control equipment determined by the Regional Administrator to be no less effective than either of the above methods.

(h) A person incinerating, adsorbing, or otherwise processing organic materials pursuant to this section shall provide, properly install and maintain in calibration, in good working order, and in operation, devices as specified in the authority to construct, or as specified by the Regional Administrator, for indicating temperatures, pressures, rates of flow, or other operating conditions necessary to determine the degree and effectiveness of air pollution control.

(i) Any person using organic solvents or any materials containing organic solvents shall supply the Regional Administrator upon request and in the manner and form prescribed by him, written evidence of the chemical composition, physical properties, and amount consumed for each organic solvent used.

(j) The provisions of this rule shall not apply to:

(1) The manufacture of organic solvents, or the transport or storage of organic solvents or materials containing organic solvents.

(2) The spraying or other use of insecticides, pesticides, or herbicides.

(3) The employment, application, evaporation, or drying of saturated halogenated hydrocarbons or perchloroethylene.

(4) The use of any material, in any article, machine, equipment or other contrivance described in paragraph (c), (d), or (e) of this section if:

(i) The volatile content of such material consists only of water, and organic solvents;

(ii) The organic solvents comprise not more than 30 percent by volume of said volatile content;

(iii) The volatile content is not a solvent of high photochemical reactivity as defined in paragraph (a) of this section; and

(iv) The organic solvent or any material containing organic solvent does not come into contact with flame. This last stipulation applies only for those articles, machines, equipment or other contrivances that are constructed or modified after November 8, 1973.

(5) The use of any material, in any article, machine, equipment or other contrivance described in paragraph (c), (d), or (e) of this section if:

(i) The organic solvent content of such material does not exceed 30 percent by volume of said material;

(ii) The volatile content is not a solvent of high photochemical reactivity; and

(iii) [Reserved]

(iv) The organic solvent or any material containing organic solvent does not come into contact with flame. This last stipulation applies only for those articles, machines, equipment or other contrivances that are constructed or modified after November 8, 1973.

(6) [Reserved]

(7) An article, machine, equipment or other contrivance described in paragraphs (c), (d) or (e) of this section used exclusively for chemical or physical analyses or determination of product quality and commercial acceptance provided that—

(i) The exemption is approved in writing by the Regional Administrator;

(ii) The operator of said article, machine, equipment or contrivance is not an integral part of the production process; and

(iii) The emissions from said article, machine, equipment or other contrivance do not exceed 800 lbs. in any calendar month.

(k) [Reserved]

(l) All determinations of emission rates shall be conducted in a manner approved in writing by the Regional Administrator.

§ 52.1146 Regulation on architectural coatings.

(a) "Architectural coating" means a coating used for buildings and their appurtenances.

(b) This regulation is applicable within the Boston Intrastate Region. All sources subject to this section shall be in compliance with paragraphs (c), (d), and (e) of this section on or before January 1, 1975.

(c) No person shall sell or offer for sale, for use within the Boston Intrastate Region, in containers of 1 quart capacity or larger, any architectural coating containing a solvent of high photochemical reactivity as defined in § 52.1145(a)(2).

(d) No person shall employ, apply, evaporate, or dry any architectural coating purchased in containers of 1 quart capacity or larger, containing a solvent of high photochemical reactivity.

(e) No person shall thin or dilute any architectural coating with a solvent of high photochemical reactivity.

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MANAGEMENT DISTRICT OF THE
STATE OF CALIFORNIA

Rule 59. Effluent Oil Water Separators.

A person shall not use any compartment of any vessel or device operated for the recovery of oil from effluent water which recovers 200 gallons a day or more of any petroleum products from any equipment which processes, refines, stores or handles hydrocarbons with a Reid vapor pressure of 0.5 pound or greater, unless such compartment is equipped with one of the following vapor loss control devices, except when gauging or sampling is taking place:

a. A solid cover with all openings sealed and totally enclosing the liquid contents of that compartment.

b. A floating pontoon or double-deck type cover, equipped with closure seals to enclose any space between the cover's edge and compartment wall.

c. A vapor recovery system, which reduces the emission of all hydrocarbon vapors and gases into the atmosphere by at least 90 per cent by weight.

d. Other equipment of an efficiency equal to or greater than a, b, or c, if approved by the Air Pollution Control Officer.

This rule shall not apply to any oil-effluent water separator used exclusively in conjunction with the production of crude oil, if the water fraction of the oil-water effluent entering the separator contains less than 5 parts per million hydrogen sulfide, organic sulfides, or a combination thereof.

This amendment shall be effective at the date of its adoption for any equipment not then completed and put into service. As to all other equipment this amendment shall be effective on July 1, 1972.

Rule 60. Circumvention.

A person shall not build, erect, install, or use any article, machine, equipment or other contrivance, the use of which, without resulting in a reduction in the total release of air contaminants to the atmosphere, reduces or conceals an emission which would otherwise constitute a violation of Division 20, Chapter 2 of the Health and Safety Code of the State of California or of these Rules and Regulations. This Rule shall not apply to cases in which the only violation involved is of Section 24243 of the Health and Safety Code of the State of California, or of Rule 51 of these Rules and Regulations.

Rule 61. Organic Liquid Loading.

A person shall not load organic liquids having a vapor pressure of 1.5 psia or greater under actual loading conditions into any tank truck, trailer, or railroad tank car from any loading facility unless the loading facility is equipped with a vapor collection and disposal system or its equivalent approved by the Air Pollution Control Officer.

Loading shall be accomplished in such a manner that all displaced vapor and air will be vented only to the vapor collection system. Measures shall be taken to prevent liquid drainage from the loading device when it is not in use or to accomplish complete drainage before the loading device is disconnected.

The vapor disposal portion of the vapor collection and disposal system shall consist of one of the following:

a. An absorber system or condensation system which processes all vapors and recovers at least 90 per cent by weight of the organic vapors and gases from the equipment being controlled.

b. A vapor handling system which directs all vapors to a fuel gas system.

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c. Other equipment of an efficiency equal to or greater than a or b if approved by the Air Pollution Control Officer.

This rule shall apply only to the loading of organic liquids having a vapor pressure of 1.5 psia or greater under actual loading conditions at a facility from which at least 20,000 gallons of such organic liquids are loaded in any one day.

"Loading facility", for the purpose of this rule, shall mean any aggregation or combination of organic liquid loading equipment which is both (1) possessed by one person, and (2) located so that all the organic liquid loading outlets for such aggregation or combination of loading equipment can be encompassed within any circle of 300 feet in diameter.

This amendment shall be effective at the date of its adoption for any equipment not then completed and put into service. As to all other equipment this amendment shall be effective on July 1, 1972.

Rule 62. Sulfur Contents of Fuels.

A person shall not burn within the Los Angeles Basin at any time between May 1 and September 30, both dates inclusive, during the calendar year 1959, and each year thereafter between April 15 and November 15, both inclusive, of the same calendar year, any gaseous fuel containing sulfur compounds in excess of 50 grains per 100 cubic feet of gaseous fuel, calculated as hydrogen sulfide at standard conditions, or any liquid fuel or solid fuel having a sulfur content in excess of 0.5 per cent by weight.

The provisions of this rule shall not apply to:

a. The burning of sulfur, hydrogen sulfide, acid sludge or other sulfur compounds in the manufacturing of sulfur or sulfur compounds.

b. The incinerating of waste gases provided that the gross heating value of such gases is less than 300 British Thermal Units per cubic

a. Incinerated at temperatures of not less than 1200 degrees Fahrenheit for a period of not less than 0.3 second, or

b. Processed in such a manner determined by the Air Pollution Control Officer to be equally, or more, effective for the purpose of air pollution control than (a) above.

A person incinerating or processing gases, vapors or gas-entrained effluents pursuant to this rule shall provide, properly install and maintain in calibration, in good working order and in operation devices, as specified in the Authority to Construct or Permit to Operate or as specified by the Air Pollution Control Officer, for indicating temperature, pressure or other operating conditions.

For the purpose of this rule, "reduction" is defined as any heated process, including rendering, cooking, drying, dehydrating, digesting, evaporating and protein concentrating.

The provisions of this rule shall not apply to any article, machine, equipment or other contrivance used exclusively for the processing of food for human consumpt

Rule 65. Gasoline Transfer Into Stationary Storage Containers.

A person shall not transfer or permit the transfer of gasoline from any tank truck or trailer into any stationary storage container with a capacity of more than 250 gallons unless such container is provided with a submerged fill pipe and unless such transfer is made under one of the following conditions:

a. The displaced gasoline vapors or gases are processed by a system that includes (1) a vapor-tight liquid fill connector, (2) a vapor-tight vapor return line to the delivery vessel of at least 3 inches nominal diameter, (3) a tank vent line sized in accordance with National Fire Protection Association Pamphlet 30, 1972 edition, paragraph 2252, and equipped with a vent discharge opening of 0.5-inch diameter or a device approved by the Air Pollution Control Officer which will insure that the vapor return line is connected before gasoline can be transferred into the container, and (4) the vapor-laden delivery vessel being refilled only at facilities equipped with vapor recovery or disposal systems described in Rule 61. The vapor return system shall collect at least 90 per cent by volume of the hydrocarbon vapors vented during filling of the stationary storage container.

b. The displaced gasoline vapors or gases are processed by a system approved by the Air Pollution Control Officer and with a minimum recovery efficiency at least equivalent to that of the system described in a. above.

c. Transfer is made to a storage container equipped as described in Rule 56a, b or c.

The provisions of this rule shall not apply to the transfer of gasoline into any container having a capacity of less than 2000 gallons which was installed prior to May 1, 1973, or to any underground storage container installed prior to January 1, 1965, where the fill line between the fill connection and container is offset.

The provisions of this rule shall not apply to any stationary container which is used primarily for the fueling of implements of husbandry, as such vehicles are defined in Division 16 (Section 36000, et seq.) of the California Vehicle Code.

A person shall not install any gasoline storage container with a capacity of more that 250 gallons unless such container is equipped as described in this rule.

For the purpose of this rule, the term "gasoline" is defined as any petroleum distillate having a Reid vapor pressure of 4 pounds or greater.

For the purpose of this rule, the term "submerged fill pipe" is defined as any fill pipe the discharge opening of which is entirely submerged when the liquid level is 6 inches above the bottom of the container. "Submerged fill pipe" when applied to a container which is loaded from the side is defined as any fill pipe the discharge opening of which is entirely submerged when the liquid level is 18 inches above the bottom of the container.

This rule shall be effective:

1. On May 1, 1975, for all containers of 6,000-gallon capacity or greater.
2. On May 1, 1976, for all containers of less than 6,000-gallon capacity.

Schedule of increments of progress for all sources receiving gasoline into stationary storage containers of 6,000-gallon capacity or greater:

1. September 15, 1974 - Submit to the Air Pollution Control Officer a final control plan which describes at a minimum the steps that will be taken by the source to achieve compliance with the provisions of this rule.
2. November 15, 1974 - Negotiate and sign all necessary contracts for emission control systems, or issue orders for the purchase of component parts to accomplish emission control.
3. December 1, 1974 - Initiate on-site construction or installation of emission control equipment.
4. April 1, 1975 - Complete on-site construction or installation of emission control equipment.
5. May 1, 1975 - Assure final compliance with the provisions of this rule.

Schedule of increments of progress for all sources receiving gasoline into stationary storage containers of less than 6,000-gallon capacity:

1. January 6, 1975 - Submit to the Air Pollution Control Officer a final control plan which describes at a minumum the steps that will be taken by the source to achieve compliance with the provisions of this rule.
2. April 1, 1975 - Negotiate and sign all necessary contracts for emission control systems, or issue orders for the purchase of component parts to accomplish emission control.
3. June 1, 1975 - Initiate on-site construction or installation of emission control equipment.
4. February 1, 1976 - Complete on-site construction or installation of emission control equipment.
5. May 1, 1976 - Assure final compliance with the provisions of this rule.

Rule 65.1. Gasoline Transfer Into Vehicle Fuel Tanks.

(a) A person shall not transfer or permit the transfer of gasoline into any motor vehicle fuel tank of greater than 5 gallons capacity unless such transfer is made through a fill nozzle which:

(1) Is designed and operated to prevent the discharge of gasoline vapors to the atmosphere from the vehicle filler neck and the fill nozzle.

(2) Directs displaced hydrocarbon vapors through the fill nozzle to a system that will prevent at least 90 per cent by volume of such hydrocarbon vapors from entering the atmosphere; and

(3) Prevents fuel tank overfills and spillage on fill nozzle disconnect.

Vapor return and/or vapor recovery systems used to comply with the provisions of this rule shall comply with all safety, fire, weights and measures, and other applicable codes and/or regulations. All fill nozzles and vapor recovery equipment installed must be of a type approved for the purpose by a nationally recognized fire and safety testing organization.

(b) If it is demonstrated to the satisfaction of the Air Pollution Control Officer that it is impractical to comply with the provisions of this rule as a result of vehicle fill neck configuration, location, or other design features for a class of vehicle in existence or in production on June 1, 1976, the provisions of this rule shall not apply to such vehicles. However, in no case shall such configuration exempt any gasoline dispensing facility from installing and using in the most effective manner a system required by this rule.

(c) The provisions of this rule shall not apply to the transfer of gasoline from any container having a capacity of 250 gallons or less, nor from any mobile container used exclusively for refueling of motor vehicles.

(d) The provisions of this rule shall not apply to the transfer of gasoline from any container having a capacity of less than 2000 gallons which was installed prior to May 1, 1973, nor from any underground storage container installed prior to January 1, 1965, where the fill line between the fill connection and container is offset.

(e) The provisions of this rule shall not apply to the fueling of implements of husbandry, as such vehicles are defined in Division 16 (Section 36000, et seq.) of the California Vehicle Code.

(f) For the purpose of this rule, the term "gasoline" is defined as any petroleum distillate having a Reid vapor pressure of 4 pounds or greater.

(g) This rule shall be effective:

(1) On June 1, 1976, for the transfer of gasoline from all containers of 6000-gallon capacity or greater.

(2) On June 1, 1977, for the transfer of gasoline from all containers of less than 6000-gallon capacity.

(h) Schedule of increments of progress for all sources transferring gasoline into motor vehicle fuel tanks from containers of 6000-gallon capacity or greater:

(1) January 6, 1975 - Submit to the Air Pollution Control Officer a final control plan which describes at a minimum the steps that will be taken by the source to achieve compliance with the provisions of paragraph (a) of this rule.

(2) March 1, 1975 - Commence issuing purchase orders and contracts for component parts and installation of control systems to accomplish the final control plan submitted in accordance with paragraph h (1) above.

(3) May 1, 1975 - Initiate on-site construction or installation of emission control equipment.

(4) April 1, 1976 - Complete on-site construction or installation of emission control equipment.

(5) June 1, 1976 - Assure final compliance with the provisions of paragraph (a) of this rule.

(i) Schedule of increments of progress for all sources transferring gasoline into motor vehicle fuel tanks from containers of less than 6000-gallon capacity:

(1) June 1, 1975 - Submit to the Air Pollution Control Officer a final control plan which describes at a minimum the steps that will be taken by the source to achieve compliance with the provisions of paragraph (a) of this rule.

(2) November 1, 1975 - Commence issuing purchase orders and

contracts for component parts and installation of control systems to accomplish the final control plan submitted in accordance with paragraph (i) (1) above.

(3) January 2, 1976 Initiate on site construction or installation of emission control equipment.

(4) April 1, 1977 - Complete on-site construction or installation of emission control equipment.

(5) June 1, 1977 - Assure final compliance with the provisions of paragraph (a) of this rule.

Rule 66. Organic Solvents.

a. A person shall not discharge into the atmosphere more than 15 pounds of organic materials in any one day, nor more than 3 pounds in any one hour, from any article, machine, equipment or other contrivance, in which any organic solvent or any material containing organic solvent comes into contact with flame or is baked, heat-cured or heat-polymerized, in the presence of oxygen, unless said discharge has been reduced by at least 85 per cent. Those portions of any series of articles, machines, equipment or other contrivances designed for processing a continuous web, strip or wire which emit organic materials and using operations described in this section shall be collectively subject to compliance with this section.

b. A person shall not discharge into the atmosphere more than 40 pounds of organic materials in any one day, nor more than 8 pounds in any one hour, from any article, machine, equipment or other contrivance used under conditions other than described in section (a), for employing or applying, any photochemically reactive solvent, as defined in section (k), or material containing such photochemically reactive solvent, unless said discharge has been reduced by at least 85 per cent. Emissions of organic materials into the atmosphere resulting from air or heated drying of products for the first 12 hours after their removal from any article, machine, equipment, or other contrivance described in this section shall be included in determining compliance with this section. Emissions resulting from baking, heat-curing, or heat polymerizing as described in section (a) shall be excluded from determination of compliance with this section. Those portions of any series of articles, machines, equipment or other contrivances designed for processing a continuous web, strip or wire which emit organic materials and using operations described in this section shall be collectively subject to compliance with this section.

c. A person shall not, after August 31, 1974, discharge into the atmosphere more than 3,000 pounds of organic materials in any one day, nor more than 450 pounds in any one hour, from any article, machine, equipment or other contrivance in which any non-photochemically reactive organic solvent or any material containing such solvent is employed or applied, unless said discharge has been reduced by at least 85 per cent. Emissions of organic materials into the atmosphere resulting from air or heated drying of products for the first 12 hours after their removal from any article, machine, equipment, or other contrivance described in this section shall be included in determining compliance with this section. Emissions resulting from baking, heat-curing, or heat-polymerizing as described in section (a) shall be excluded from determination of compliance with this section. Those portions of any series of articles, machines, equipment or other contrivances designed for processing a continuous web, strip or wire which emit organic materials and using operations described in this section shall be collectively subject to compliance with this section. Pursuant to Section 24304(a), Health and Safety Code, any person currently emitting pollutants exceeding the limits set forth in this section shall submit to the Hearing Board, for public hearing after notice as required by Section 24295, Health and Safety Code, a schedule of increments of progress indicating that such person will be in compliance with the prescribed emissions limits prior to September 1, 1974. If such person cannot be in compliance before such date, he may apply for a variance.

d. Emissions of organic materials to the atmosphere from the clean-up with photochemically reactive solvent, as defined in section (k), of any article, machine, equipment or other contrivance described in sections (a), (b) or (c), shall be included with the other emissions of organic materials from that article, machine, equipment or other contrivance for determining compliance with this rule.

f. Emissions of organic materials into the atmosphere required to be controlled by sections (a), (b) or (c), shall be reduced by:

1. Incineration, provided that 90 per cent or more of the carbon in the organic material being incinerated is oxidized to carbon dioxide, or
2. Adsorption, or
3. Processing in a manner determined by the Air Pollution Control Officer to be not less effective than (1) or (2) above.

g. A person incinerating, adsorbing, or otherwise processing organic materials pursuant to this rule shall provide, properly install and maintain in calibration, in good working order and in operation, devices as specified in the authority to construct or the permit to operate, or as specified by the Air Pollution Control Officer, for indicating temperatures, pressures, rates of flow or other operating conditions necessary to determine the degree and effectiveness of air pollution control.

h. Any person using organic solvents or any materials containing organic solvents shall supply the Air Pollution Control Officer, upon request and in the manner and form prescribed by him, written evidence of the chemical composition, physical properties and amount consumed for each organic solvent used.

i. The provisions of this rule shall not apply to:

1. The manufacture of organic solvents, or the transport or storage of organic solvents or materials containing organic solvents.
2. The use of equipment for which other requirements are specified by Rules 56, 59, 61 or 65 or which are exempt from air pollution control requirements by said rules.
3. The spraying or other employment of insecticides, pesticides or herbicides.
4. The employment, application, evaporation or drying of saturated halogenated hydrocarbons or perchloroethylene.
5. The use of any material, in any article, machine, equipment or other contrivance described in sections (a), (b), (c) or (d), if:

(i) the volatile content of such material consists only of water and organic solvents, and

(ii) the organic solvents comprise not more than 20 per cent by volume of said volatile content, and

(iii) the volatile content is not photochemically reactive as defined in section (k), and

(iv) the organic solvent or any material containing organic solvent does not come into contact with flame.

6. The use of any material, in any article, machine, equipment or other contrivance described in sections (a), (b), (c) or (d), if:

(i) the organic solvent content of such material does not exceed 20 per cent by volume of said material, and

(ii) the volatile content is not photochemically reactive as defined in section (k), and

(iii) more than 50 per cent by volume of such volatile material is evaporated before entering a chamber heated above ambient application temperature, and

(iv) the organic solvent or any material containing organic solvent does not come into contact with flame.

7. The use of any material, in any article, machine, equipment or other contrivance described in sections (a), (b), (c) or (d), if:

(i) the organic solvent content of such material does not exceed 5 per cent by volume of said material, and

(ii) the volatile content is not photochemically reactive as defined in section (k), and

(iii) the organic solvent or any material containing organic solvent does not come into contact with flame.

j. For the purposes of this rule, organic solvents include diluents and thinners and are defined as organic materials which are liquids at standard conditions and which are used as dissolvers, viscosity reducers or cleaning agents, except that such materials which exhibit a boiling point higher than 220°F at 0.5 millimeter mercury absolute pressure or having an equivalent vapor pressure shall not be considered to be solvents unless exposed to temperatures exceeding 220°F.

k. For the purposes of this rule, a photochemically reactive solvent is any solvent with an aggregate of more than 20 per cent of its total volume composed of the chemical compounds classified below or which exceeds any of the following individual percentage composition limitations, referred to the total volume of solvent:

1. A combination of hydrocarbons, alcohols, aldehydes, esters, ethers or ketones having an olefinic or cyclo-olefinic type of unsaturation: 5 per cent;
2. A combination of aromatic compounds with eight or more carbon atoms to the molecule except ethylbenzene: 8 per cent;
3. A combination of ethylbenzene, ketones having branched hydrocarbon structures, trichloroethylene or toluene: 20 per cent.

Whenever any organic solvent or any constituent of an organic solvent may be classified from its chemical structure into more than one of the above groups of organic compounds, it shall be considered as a member of the most reactive chemical group, that is, that group having the least allowable per cent of the total volume of solvents.

l. For the purposes of this rule, organic materials are defined as chemical compounds of carbon excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides, metallic carbonates and ammonium carbonate.

Rule 66.1. Architectural Coatings.

a. A person shall not sell or offer for sale for use in Los Angeles County, in containers of one quart capacity or larger, any architectural coating containing photochemically reactive solvent, as defined in Rule 66(k).

b. A person shall not employ, apply, evaporate or dry in Los Angeles County any architectural coating, purchased in containers of one quart capacity or larger, containing photochemically reactive solvent, as defined in Rule 66 (k).

c. A person shall not thin or dilute any architectural coating with a photochemically reactive solvent, as defined in Rule 66(k).

d. For the purposes of this rule, an architectural coating is defined as a coating used for residential or commercial buildings and their appurtenances; or industrial buildings.

Rule 66.2 Disposal and Evaporation of Solvents.

A person shall not during any one day dispose of a total of more than 1½ gallons of any photochemically reactive solvent, as defined in Rule 66(k), or of any material containing more than 1½ gallons of any such photochemically reactive solvent by any means which will permit the evaporation of such solvent into the atmosphere.

Rule 66.3 Dry Cleaning Solvent

A person shall not, after December 31, 1974, use organic solvent containing a total of 4 per cent or more by volume of materials described in Rule 66 (k), except perchloroethylene, for the commercial cleaning of garments and fabrics unless the emission of organic materials into the atmosphere is reduced by at least 90 per cent by weight.

Compliance with this rule must be achieved under the following schedule of increments of progress:

(1) December 15, 1974 -- Submit to the Air Pollution Control Officer a final control plan which describes at a minimum the steps to be taken to achieve compliance with the provisions of this rule.

(2) December 31, 1974 -- Achieve final compliance with the provisions of this rule.

Rule 66.4 Metal Surface Coating--Thinner and Reducer

A person shall not, after July 31, 1975, use photochemically reactive solvent, as defined in Rule 66 (k), to thin, reduce or dilute industrial metal surface coatings unless the emission of organic materials into the atmosphere from the use of such coatings is reduced by at least 85 per cent by weight.

Compliance with this rule must be achieved under the following schedule of increments of progress:

(1) December 15, 1974 --	Submit to the Air Pollution Control Officer a final control plan which describes at a minimum the steps to be taken to achieve compliance with the provisions of this rule.
(2) February 3, 1975 --	Negotiate and sign all necessary contracts for emission control systems, or issue purchase orders to obtain substitute organic solvents that will comply with the provisions of this rule.
(3) May 1, 1975 --	Initiate on-site construction or installation of any emission control equipment.
(4) July 1, 1975 --	Complete on-site construction of any emission control equipment or begin use of substitute organic solvents.
(5) July 31, 1975 --	Assure final compliance with the provisions of this rule.

Rule 66.5 Surface Cleaning and Degreasing

A person shall not, after December 31, 1974, use photochemically reactive solvent, as defined in Rule 66 (k), in surface cleaning or degreasing operations unless the emission of organic materials into the atmosphere is reduced by at least 85 per cent by weight.

Compliance with this rule must be achieved under the following schedule of increments of progress:

(1) December 15, 1974 --	Submit to the Air Pollution Control Officer a final control plan which describes at a minimum the steps to be taken to achieve compliance with the provisions of this rule.
(2) December 31, 1974 --	Achieve final compliance with the provisions of this rule.

Rule 67. Fuel Burning Equipment.

A person shall not build, erect, install or expand any non-mobile fuel burning equipment unit unless the discharge into the atmosphere of contaminants will not and does not exceed any one or more of the following rates:

1. 200 pounds per hour of sulfur compounds, calculated as sulfur dioxide (SO_2);
2. 140 pounds per hour of nitrogen oxides, calculated as nitrogen dioxide (NO_2);
3. 10 pounds per hour of combustion contaminants as defined in Rule 2m and derived from the fuel.

For the purpose of this rule, a fuel burning equipment unit shall be comprised of the minimum number of boilers, furnaces, jet engines or other fuel burning equipment, the simultaneous operations of which are required for the production of useful heat or power.

Fuel burning equipment serving primarily as air pollution control equipment by using a combustion process to destroy air contaminants shall be exempt from the provisions of this rule.

Nothing in this rule shall be construed as preventing the maintenance or preventing the alteration or modification of an existing fuel burning equipment unit which will reduce its mass rate of air contaminant emissions.

Rule 68. Fuel Burning Equipment -- Oxides of Nitrogen.

A person shall not discharge into the atmosphere from any non mobile fuel burning article, machine, equipment or other contrivance, having a maximum heat input rate of more than 1775 million British Thermal Units (BTU) per hour (gross), flue gas having a concentration of nitrogen oxides, calculated as nitrogen dioxide (NO_2) at 3 per cent oxygen, in excess of that shown in the following table:

NITROGEN OXIDES - PARTS PER MILLION PARTS OF FLUE GAS

FUEL	EFFECTIVE DATE	
	DECEMBER 31, 1971	DECEMBER 31,1974
Gas	225	125
Liquid or Solid	325	225

Pursuant to Section 24304(a), Health and Safety Code, any person currently emitting pollutants exceeding the limits set forth in this Rule shall submit to the Hearing Board, for public hearing after notice as required by Section 24295, Health and Safety Code, a schedule of increments of progress indicating that such person will be in compliance with the prescribed emissions limits prior to December 31, 1974. If such person cannot be in compliance before such date, he may apply for a variance.

Rule 68.1 Fuel Burning Equipment - Combustion Contaminants

A person shall not discharge into the atmosphere combustion contaminants exceeding in concentration at the point of discharge, 0.3 grain per cubic foot of gas calculated to 12 per cent of carbon dioxide (CO_2) at standard conditions.

Rule 69. Vacuum Producing Devices or Systems.

A person shall not discharge into the atmosphere more than 3 pounds of organic materials in any one hour from any vacuum producing devices or systems including hot wells and accumulators, unless said discharge has been reduced by at least 90 per cent.

This rule shall be effective at the date of its adoption for any equipment not then completed and put into service. As to all other equipment this rule shall be effective on July 1, 1972.

Rule 70. Asphalt Air Blowing.

A person shall not operate or use any article, machine, equipment or other contrivance for the air blowing of asphalt unless all gases, vapors and gas-entrained effluents from such an article, machine, equipment or other contrivance are:

a. Incinerated at temperatures of not less than 1400 degrees Fahrenheit for a period of not less than 0.3 second, or

b. Processed in such a manner determined by the Air Pollution Control Officer to be equally, or more, effective for the purpose of air pollution control than (a) above.

This rule shall be effective at the date of its adoption for any equipment not then completed and put into service. As to all other equipment this rule shall be effective on July 1, 1972.

Rule 71. Carbon Monoxide.

A person shall not, after December 31, 1971, discharge into the atmosphere carbon monoxide (CO) in concentrations exceeding 0.2 per cent by volume measured on a dry basis.

The provisions of this rule shall not apply to emissions from internal combustion engines.

Rule 72. Pumps and Compressors.

A person shall not, after July 1, 1973, use any pump or compressor handling organic materials having a Reid Vapor Pressure of 1.5 pounds or greater unless such pump or compressor is equipped with a mechanical seal or other device of equal or greater efficiency approved by the Air Pollution Control Officer.

The provisions of this rule shall not apply to any pump or compressor which has a driver of less than one (1) horsepower motor or equivalent rated energy or to any pump or compressor operating at temperatures in excess of 500°F.

Rule 73. Safety Pressure Relief Valves.

A person shall not, after July 1, 1973, use any safety pressure relief valve on any equipment handling organic materials above 15 pounds per square inch absolute pressure unless the safety pressure relief valve is vented to a vapor recovery or disposal system, protected by a rupture disc, or is maintained by an inspection system approved by the Air Pollution Control Officer.

The provisions of this rule shall not apply to any safety pressure relief valve of one (1) inch pipe size or less.

MADERA COUNTY AIR POLLUTION CONTROL DISTRICT OF THE STATE OF CALIFORNIA

RULE 410 Organic Solvents

a. A person shall not discharge more than 15 pounds of organic materials into the atmosphere in any one day from any article, machine, equipment or other contrivance in which any organic solvent or any material containing organic solvent comes into contact with flame or is baked, heatcured or heat-polymerized, in the presence of oxygen, unless all organic materials discharged from such article, machine, equipment or other contrivance have been reduced either by at least 85 percent overall or to not more than 15 pounds in any one day.

b. A person shall not discharge more than 40 pounds of organic material into the atmosphere in any one day from any article, machine, equipment, or other contrivance used under conditions other than described in section (a), for employing, applying, evaporation or drying any photochemically reatice solvent, as defined in section (k), or material containing such solvent, unless all organic materials discharged from such article, machine, equipment or other contrivance have been reduced either by at least 85 percent overall or to not more than 40 pounds in one day.

c. Any series of articles, machines, equipment or other contrivances designed for processing a continuously moving sheet, web, strip or wire which is subjected to any combination of operations described in sections (a) or (b) involving any photochemically reative solvent, as defined in section (k), or material containing such solvent, shall be subject to compliance with section (b). Where only nonphotochemically reative solvents, are employed or applied, and where any portion or portions of said series of articles, machines, equipment or other contrivances involves operations described in section (a), said portions shall be collectively subject to compliance with section (a).

d. A person shall not discharge into the atmosphere more than 3,000 pounds of organic materials in any one day from any articles, machine, equipment or other contrivances in which any non-photochemically reative organic solvent is employed or applied, unless said discharge has been reduced by at least 85 per cent.

Emissions of organic materials to the atmosphere from the cleanup with photochemically reative solvent, as defined in section (k), of any articles, machine, equipment or other contrivance described in sections (a), (b), or (c), shall be included with the other emissions of organic materials from that article, machine, equipment or other contrivance for determining compliance with this rule.

e. Emissions of organic materials to the atmosphere as a result of spontaneously continuing drying of products for the first 12 hours after their removal from any article, machine, equipment or other contrivance described in sections (a), (b), or (c), shall be included with other emissions of organic materials from that article, machine, equipment or other contrivance for determining compliance with this rule.

f. Emissions of organic materials into the atmosphere required to be controlled by sections (a), (b), or (c), shall be reduced by:

   1. Incineration, provided that 90 percent or more of the carbon in the organic material being incinerated is oxidized to carbon dioxide, or

   2, Adsorption, or

   3. Processing in a manner determined by the Air Pollution Control Officer to be not less effective than (1) or (2) above.

g. A person incinerating, absorbing, or otherwise processing organic materials pursuant to this rule shall provide, properly install and maintain in calibration, in good working order and in operation, devices as specified in the authority to construct or the permit to operate, or as specified by the Air Pollution Control Officer, for indicating temperatures, pressures, rates of flow or other operating conditions necessary to determine the degree and effectiveness of air pollution control.

h. Any person using organic solvents or any materials containing organic solvents shall supply the Air Pollution Control Officer, upon request and in the manner and form presribed by him, written evidence of the chemical compostion, physical properties and amount consumed for each organic solvent used.

i. The provisions of this rule shall not apply to:

   1. The manufacture of organic solvents, or the transport or the storage of organic solvents or materials containing organic solvents.

   2. The use of equipment for which other requirements are specified by Rules 410, 411, 412, and 412, or which are exempt from air pollution control requirements by said rules.

   3. The spraying or other employment of insecticides, pesticides or herbicides.

   4. The employment, application, evaporation or drying of saturated halogenated hydrocarbons or perchloroethylene.

   5. The use of any material, in any article, machine, equipment or other contrivance described in sections (a), (b), (c), or (d), if:

(1) the volatile content of the material consists only of water and solvents and

(2) the organic solvents content comprises not more than 20% by volume of the total volatile content and

(3) the volatile content is not photochemically reactive and

(4) the organic solvent does not come into contact with flame.

6. The use of any material in any article, machine, equipment or other contrivance described in sections (a), (b), (c) or (d) if"

(1) until January 1, 1977, the organic solvent content of a material does not exceed 30% by volume of said material: after January 1, 1977, the organic solvent content of such material shall not exceed 20% by volume and

(2) the volatile content is not photochemically reactive and

(3) the organic solvent content does not come into contact with flame.

j. For the purposes of this rule, organic solvents include diluents and thinners and are defined as organic materials which are liquids at standard conditions and which are used as dissolvers, viscosity reducers or cleaning agents.

k. For the purpose of this rule, a photochemically reactive solvent is any solvent with an aggregate of more than 20 percent of its total volume composed of the chemical compounds classified below or which exceeds any of the following individual percentage composition limitations, referred to the total volume of solvent:

1. A combination of hydrocarbons, alcohols, aldehydes, esters, ethers or ketones having an olefinic or cycloolefinic type of unsaturation: 5 percent;

2. A combination of aromatic compounds with eight or more carbon atoms to the molecule except ethylbenzene: 8 percent;

3. A combination of ethylbenzene, ketones having branched hydrocarbon structures trichloroethylene or tuoluene: 20 per cent.

Whenever any organic solvent or any constituent of an organic solvent may be classified from its chemical structure into more than one of the above groups of organic compounds, it shall be considered as a member of the most reactive chemical group; that is, that group having the least allowable percentage of the toal volume of solvents.

1. For the purpose of this rule, organic materials are defined as chemical compounds of carbon excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides, metallic carbonates and ammonium carbonate.

RULE 410.1 Architectural Coatings:

a. A person shall not sell or offer for sale, for use in containers of one quart capacity or larger, any architectural coating containing photochemically reactive solvent as defined in Rule 409 (k).

b. A person shall not employ, apply, evaporate or dry in Stanislaus County, any architectural coating purchased in containers of one quart capacity or larger, containing photochemically reactive solvent, as defined in Rule 409 (k).

c. A person shall not thin or dilute any architectural coating with a photochemically reactive solvent, as defined in Rule 409 (k).

d. For the purpose of this rule and architectural coating is defined as a coating used for residential or commerical buildings and their appurtenances; or industrial buildings.

SECTION 410.2 Disposal and Evaporation of Solvents: A person shall not during any one day dispose of a total of more than 1½ gallons of any photochemically reactive solvent as defined in Section 410 (k), or of any material containing more than 1½ gallons of any such photochemically reactive solvent into the atmosphere.

SECTION 411. Storage of Petroleum Products: A person shall not place, store or hold in any stationary tank, reservoir or other containers of more than 40,000 gallons capacity any gasoline or any petroleum distillate having a vapor pressure of 1.5 pounds per square inch or greater under actual storage conditions, unless such tank, reservoir or other container is a pressure tank maintaining working pressures sufficent at all times to prevent hydrocarbon vapor or gas loss to the atmosphere, or is designed and equipped with one of the following vapor loss control devices, properly installed, in good working order and in operation:

a. A floating roof, consisting of a pontoon type or double-deck type roof, resting on the surface of the liquid contents and equipped with a closure seal, or seals, to close the space between the roof edge and tank wall. The control equipment provided for in this paragraph shall not be used if the gasoline or petroleum distillate has a vapor pressure of 11.9 pounds per square inch or greater under actual storage conditions. All tank gauging and sampling devides shall be gas-tight except when gauging or sampling is taking place.

b. A vapor recovery system, consisting of a vapor gathering system capable of collecting the hydrocarbon vapors and gases discharged and a vapor disposal system capable of processing such hydrocarbon vapors and gases so as to prevent their emission to the atmosphere and with all tank gauging and sampling devices gas-tight except when gauging or sampling is taking place.

c. Other equipment of equal efficiency, provided such equipment is submitted to and approved by the Air Pollution Control Officer.

RULE 412. Gasoline Loading Into Tanks: A person shall not load or permit the loading of gasoline into any stationary tank, installed after December 31, 1970, with a capacity of 250 gallons or more from any tank truck or trailer, except through a permanent submerged fill pipe, unless such tank is equipped with a vapor loss control device or is a pressure tank.

A person shall not install any gasoline tank with a capacity of 250 gallons or more unless such tank is equipped as described in the first paragraph of this section.

For the purpose of this section, the term "gasoline" is defined as any petroleum distillate having a Reid vapor pressure of 4 pounds or greater.

For the purpose of this rule, the term "submerged fill pipe" is defined as any fill pipe the discharge opening of which is entirely submerged when the liquid level is 6 inches above the bottom of the tank. "Submitted fill pipe" when applied to a tank which is loaded from the side is defined as any fill pipe the discharge opening of which is entirely submerged when the liquid level is 18 inches above the bottom of the tank.

RULE 412.1 Transfer of Gasoline into Stationary Storage Container: A person shall not transfer or permit the transfer of gasoline from any tank truck or trailer into any stationary storage container with a capacity of more than 250 gallons unless such container is equipped with a submerged fill pipe and unless 90 percent by volume of the gasoline vapor displaced during the filling of the stationary storage containers are prevented from being released to the atmosphere.

No person shall use, operate, or store gasoline in a delivery vessel into which vapors are displaced unless the vessel is designed and maintained to be vapor-tight at all times.

Any delivery vehicle laden with gasoline vapors shall be refilled at a bulk plant which is equipped to recover at least 90 percent by volume of the gasoline vapors displaced during the filling of the delivery vehicle.

The provisions of this Rule shall not apply to the following:

1. The transfer of gasoline into stationary storage containers used for the fueling of implements of husbandry as such vehicles are defined in Division 16 (Section 36000 et seq.) of the California Vehicle Code;

2. The transfer of gasoline into any stationary container which was installed prior to July 1, 1975, or

3. Gasoline delivery vehicles which exclusively service storage containers which are exempt from the provisions of this Rule.

4. Loading facilities exempted by Rule 413 and gasoline storage tank and delivery vehicles served from such loading facilities.

The owner or operator of any stationary storage container which is subject to this Rule and which is installed on or after July 1, 1975 shall comply with the provisions of this Rule at the time of installation.

Vapor-return and/or vapor recovery stystem used to comply with the provisions of this Rule shall comply with all safety, fire, weights and measures, and other applicable codes and/or regulations.

For the purpose of this Rule, the term "gasoline" is defined as any petroleum distillate having a Reid vapor pressure of 4 pounds or greater.

RULE 412.2 Transfer of Gasoline Into Vehicle Fuel Tanks A person shall not transfer or permit the transfer of gasoline into any motor vehicle fuel tank of greater than 5 gallons capacity unless such transfer is made in a manner by which the emissions to the atmosphere of the gasoline vapors displaced during filling of the vehicle fuel tank are reduced by at least 90 percent by volume.

It is demonstrated that it is impractical to comply with the provisions of this Rule as a result of vehicle fill neck configuration, location, or other design features for vehicles in existence or in production on July 1, 1976, the Air Pollution Control Officer may find and order that the provisions of this Rule shall not apply during the filling of such vehicles. In no case, however, shall such configuration exempt any gasoline dispensing facility from installing and using, in the most effective practicable, control equipment required by this Rule.

The provisions of this Rule shall not apply to the following:

1. The fueling of implements of husbandry, as such vehicles are defined in Division 16 (Section 36000 et seq.) of the California Vehicle Code;
2. The transfer of gasoline from any stationary storage container which was installed prior to July 1, 1975; or
3. The transfer of gasoline from any stationary storage container of a capacity of 250 gallons or less.
4. The transfer of gasoline from any stationary storage container served from loading facilities exempted by Rule 413.

Any gasoline dispensing system to this Rule, installed on or after July1 1975, shall comply with the provisions of this Rule at the time of installation.

Gasoline dispensing equipment used to comply with the provision of this Rule shall comply with all applicable safety, fire, weight and measures, and other applicable codes and/or regulations.

For this purpose of this Rule, the term "gasoline" is defined as any petroleum distillate having a Reid vapor pressure of 4 pounds or greater.

RULE 413 Organic Liquid Loading A person shall not load organic liquids having a vapor pressure of 1.5 pounds per square inch or greater under actual loading conditions into any tank truck, trailer, or railroad tank car from any loading facility unless the loading facility is equipped with a vapor collection and disposal system or its equivalent approved by the Air Pollution Control Officer.

Loading shall be accomplished in such a manner that all displaced vapor and air will be vented only to the vapor collection system. Measures shall be taken to prevent liquid drainage from the loading device when it it not in use or to accomplish complete drainage before the loading device is disconnected.

The vapor disposal portion of the vapor collection and disposal system shall consist of one of the following:

a. An absorber system or condensation system which processes all vapors and recovers at least 90 percent by weight of the organic vapors and gases from the equipment being controlled.

b. A vapor handling system which directs all vapors to a fuel gas system.

c. Other equipment of an efficiency equal to or greater than (a) or (b) if approved by the Air Pollution Control Officer.

This rule shall apply only to the loading of organic liquids having a vapor pressure of 1.5 pounds per square inch or greater under actual loading conditions at a facility from which at least 20,000 gallons of such organic are loaded in any one day.

"Loading Facility", for the purpose of this Rule, shall mean any aggregation or combination of organic liquid loading equipment which is both (1) possessed by one person, and (2) located so that all the organic liquid loading outlets for such aggregation or combination of loading equipment can be encompassed within any circle of 300 feet in diameter.

RULE 414 Effluent Oil Water Separators A person shall not use any compartment of any vessel or device operated for the recovery of oil from effluent water which recovers 200 gallons a day or more of any petroleum products from any equipment which processes, refines, stores, or handles hydrocarbons with a Reid vapor pressures of 0.5 pounds or greater, unless such compartment is equipped with one of the following vapor loss control devices, except when gauging or sampling is taking place:

a. A solid cover with all openings sealed and totally enclosing the liquid contents of that compartment.

b. A floating pontoon or double-deck type cover, equipped with closure seals, to enclose any space between the cover's edge and compartment wall.

c. A vapor recovery system which reduces the emission of all hydrocarbon vapors and gases into the atmosphere by at least 90 percent by weight.

d. Other equipment of an efficiency equal to or greater than (a), (b), or (c), if approved by the Air Pollution Control Officer.

This Rule shall not apply to any oil-effluent water separator used exclusively in conjunction with the production of crude oil, if the water fraction of the oil-water effluent entering the separator contains less than 5 parts per million hydrogen sulfide, organic sulfides, or a combination thereof.

RULE 415 Reduction of Animal Matter A person shall not operate or use any article, machine, equipment or other contrivance for the reduction of animal matter unless all gases, vapors and gas-entrained effluents from such an article, machine, equipment or other contrivance are:

a. Incinerated at temperatures of not less than 1200 degrees Fahrenheit for a period of not less than 0.3 seconds, or

b. Processed in such a manner determined by the Air Pollution Control Officer to be equally, or more effective for the purpose of air pollution control than (a) above.

A person incinerating or processing gases, vapors or gas-entrained effluents pursuant to this Rule shall provide, properly install and maintain in calibration, in good working order and in operation devices, as specified in the Authority to Construct or Permit to Operate or as specified by the Air Pollution Control Officer, for indicating temperature, pressure or other operating conditions.

For the purpose of this Rule, "reduction" is defined as any heated process, including rendering, cooking, drying, dehydration, digesting, evaporating and protein concentrating.

The provisions of this Rule shall not apply to any article, machine, equipment or other contrivance used exclusively for the processing of food for human comsumption.

SAN JOAQUIN COUNTY AIR
POLLUTION CONTROL DISTRICT
OF THE STATE OF CALIFORNIA

RULE 409 Organic Solvents

a. A person shall not discharge into the atmosphere more than 15 pounds of organic materials in any 1 day from any article, machine, equipment, or other contrivance in which any organic solvent or any material containing organic solvent comes into contact with flame or is baked, heat-cured, or heat-polymorized in the presence of oxygen, unless said discharge has been reduced by at least 85 percent. Those portions of any series of articles, machines, equipment, or other contrivances designed for processing continuous web, strip, or wire that emit organic materials in the course of using operations described in this section shall be collectively subject to compliance with this section.

b. A person shall not discharge into the atmosphere more than 40 pounds of organic materials in any 1 day from any article, machine, equipment, or other contrivance used under conditions other than those described in paragraph(a) of this section for employing or applying any photochemically reactive solvent, as defined in paragraph (k) of this section, or material containing such photochemically reactive solvent, unless said discharge has been reduced by at least 85 percent. Emissions of organic materials into the atmosphere resulting from air or heated-drying of products for the first 12 hours after their removal from any article, machine, or other contrivance described in this section shall be included in determining compliance with this paragraph. Emissions resulting from baking, heat-curing, or heat polymerizing as described in paragraph (a) of this section shall be excluded from determination of compliance with this section. Those portions of any series of articles, machines, equipment, or other contrivances designed for processing a continuous web, strip, or wire that emit organic materials in the course of using operations described in this section shall be collectively subject to compliance with this section.

c. A person shall not, after August 31, 1976, discharge into the atmosphere more than 3,000 pounds of organic materials in any 1 day from any article, machine, equipment, or other contrivance in which any non-photochemically reactive organic solvent or any material containing such a solvent is employed or applied, unless said discharge has been reduced by at least 85 percent. Emissions of organic materials into the atmosphere resulting from air or heated-drying of products for the first 12 hours after their removal from any article, machine, equipment, or other contrivance described in this section shall be included in determining compliance with this section. Emissions resulting from baking, heat-curing, or heat-polymerizing as described in paragraph (a) of this section shall be excluded from determination of compliance with this section. Those portions of any series of articles, machines, equipment, or other contrivances designed for processing a continuous web, strip, or wire that emit organic materials in the course of using operations described in this section shall be collectively subject to compliance with this section.

d. Emissions of organic materials to the atmosphere from the cleanup with photochemically reactive solvent, as defined in section (k), of any article, machine, equipment or other contrivance described in sections (a), (b), or (c), shall be included with the other emissions of organic materials from that article, machine, equipment or other contrivance for determining compliance with this rule.

e. Emissions of organic materials to the atmosphere as a result of spontaneously continuing drying of products for the first 12 hours after their removal from any article, machine, equipment or other contrivance described in sections (a), (b), or (c), shall be included with other emissions of organic materials from that article, machine, equipment or other contrivance for determining compliance with this rule.

f. Emissions of organic materials into the atmosphere required to be controlled by sections (a), (b), or (c), shall be reduced by:

   1. Incineration, provided that 90 percent or more of the carbon in the organic material being incinerated is oxidized to carbon dioxide, or

   2. Adsorption, or

   3. Processing in a manner determined by the Air Pollution Control Officer to be not less effective than (1) or (2) above.

g. A person incinerating, absorbing, or otherwise processing organic materials pursuant to this rule shall provide, properly install and maintain in calibration, in good working order and in operation, devices as specified in the authority to construct or the permit to operate, or as specified by the Air Pollution Control Officer, for indicating temperatures, pressures, rates of flow or other operating conditions necessary to determine the degree and effectiveness of air pollution control.

h. Any person using organic solvents or any materials containing organic solvents shall supply the Air Pollution Control Officer, upon request and in the matter and form prescribed by him, written evidence of the chemical composition, physical properties and amount consumed for each organic solvent used.

i. The provisions of this rule shall not apply to:

   1. The manufacture of organic solvents, or the transport of storage of organic solvents or materials containing organic solvents.

   2. The use of equipment for which other requirements are specified by Rules 410, 411, 411.1, 411.2, 412 and 413, or which are exempt from air pollution control requirements by said rules.

   3. The spraying or other employment of insecticides, pesticides or herbicides.

   4. The employment, application, evaporation or drying of saturated haolgenated hydrocarbons or perchloroethylene.

   5. The use of any material, in any article, machine, equipment or other contrivance described in sections (a), (b), (c) or (d), if:

      (i) the volatile content of the material consists only of water and solvents, and

(ii) the organic solvents content comprises not more than 20% by volume of the total volatile content, and

(iii) the volatile content is not photochemically reactive, and

(iv) the organic solvent does not come into contact with flame.

6. The use of any material in any article, machine, equipment or other contrivance described in sections (a), (b), (c) or (d) if:

(i) until January 1, 1977, the organic solvent of a material does not exceed 30% by volume of said material; after January 1, 1977, the organic solvent content of such material shall not exceed 20% by volume, and

(ii) the volatile content is not photochemically reactive, and

(iii) the organic solvent content does not come into contact with flame.

j. For the purpose of this rule, organic solvents include diluents and thinners and are defined as organic materials which are liquids at standard conditions and which are used as dissolvers, viscosity reducers or cleaning agents, except that such materials exhibiting a boiling point higher than 220°F at 0.5 millimeter mercury absolute pressure or having an equivalent vapor pressure shall not be considered to be solvents unless exposed to temperatures exceeding 220°F.

k. For the purposes of this rule, a photochemically reactive solvent is any solvent with an aggregate of more than 20 percent of its total volume composed of chemical compounds classified below or which exceeds any of the following individual percentage composition limitations, referred to the total volume of solvent:

1. A combination of hydrocarbons, alcohols, aldehydes, esters, ethers or ketones having an olefinic or cycloolefinic type of unsaturation: 5 percent;

2. A combination of aromatic compounds with eight or more carbon atoms to the molecule except ethylbenzene: 8 percent;

3. A combination of ethylbenzene, ketones having branched hydrocarbon structures trichloroethylene or tuoluene: 20 percent.

Whenever any organic solvent or any constituent of an organic solvent may be classified from its chemical structure into more than one of the above groups of organic compounds, it shall be considered as a member of the most reactive chemical group; that is, that group having the least allowable percentage of the total volume of solvents.

l. For the purpose of this rule, organic materials are defined as chemical compounds of carbon excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides, metallic carbonates and ammonium carbonate. (Revised August 12, 1975)

RULE 409.1 Architectural Coatings

a. A person shall not sell or offer for sale, for use in containers of one quart capacity or larger, any architectural coating containing photochemically reactive solvent as defined in Rule 409 (k).

b. A person shall not employ, apply, evaporate or dry in San Joaquin County, any architectural coating purchased in containers of one quart capacity or larger, containing photochemically reactive solvent, as defined in Rule 409 (k).

c. A person shall not thin or dilute any architectural coating with a photochemically reactive solvent, as defined in Rule 409 (k).

d. For the purposes of this rule, an architectural coating is defined as a coating used for residential or commercial buildings and their appurtenances, or industrial buildings.

RULE 409.2 Disposal and Evaporation of Solvents A person shall not, during any one day, dispose of a total of more than 1-1 1/2 gallons of any photochemically reactive solvent, as defined in Rule 409 (k), or any material containing more than 1-1 1/2 gallons of any such photochemically reactive solvent, into the atmosphere.

RULE 410 Storage of Petroleum Products A person shall not place, store, or hold in any stationary tank, reservoir or other container of more than 40,000 gallons capacity any gasoline or any petroleum distillate having a vapor pressure of 1.5 pounds per square inch or greater under actual storage conditions, unless such tank, reservoir or other container is a pressure tank maintaining working pressures sufficient at all times to prevent hydrocarbon vapor or gas loss to the atmosphere, or is designed and equipped with one of the following vapor loss control devices, properly installed, in good working order and in operation:

a. A floating roof, consisting of a pontoon type or double deck type roof, resting on the surface of the liquid contents and equipped with a closure seal, or seals, to close the space between the roof edge and tank wall. The control equipment provided for in this paragraph shall not be used if the gasoline or petroleum distillate has a vapor pressure of 11.0 pounds per square inch or greater under actual storage conditions All tank gauging and sampling devices shall be gas tight except when gauging or sampling is taking place.

b. A vapor recovery system, consisting of a vapor gathering system capable of collecting the hydrocarbon vapors and gases discharged and a vapor disposal system capable of processing such hydrocarbon vapors and gases so as to prevent their emission to the atmosphere and with all tank gauging and sampling devices gas tight except when gauging, or sampling is taking place.

c. Other equipment of equal efficiency, provided such equipment is submitted to and approved by the Air Pollution Control Officer.

RULE 411 Gasoline Loading into Tanks A person shall not load or permit the loading of gasoline into any stationary tank installed after December 31, 1970, with a capacity of 250 gallons or more from any tank truck or trailer, except through a permanent submerged fill pipe; unless such tank is equipped with a vapor loss control device or is a pressure tank.

A person shall not install any gasoline tank with a capacity of 250 gallons or more unless such tank is equipped as described in the first paragraph of this rule.

For the purpose of this Rule, the term "gasoline" is defined as any petroleum distillate having a Reid vapor pressure 4.0 pounds or greater.

RULE 411.1 Transfer of Gasoline into Stationary Storage Containers

1. (a) A person shall not transfer or permit the transfer of gasoline from any delivery vessel (i.e., tank truck or trailer) into any stationary storage container with a capacity of more than 250 gallons unless such container is equipped with a permanent submerged fill pipe and unless 90 percent by weight of the gasoline vapors displaced during the filling of the stationary storage container are prevented from being released to the atmosphere.

(b) The provisions of this Section shall be subject to the following exceptions:

A. The transfer of gasoline into any stationary storage container used primarily for the fueling of implements of husbandry as such vehicles are defined in Division 16 (Section 36000 et. seq.) of the California Vehicle Code, if such container is equipped by July 1, 1976 with a permanent submerged fill pipe.

B. The transfer of gasoline into any stationary storage container having a capacity of 2,000 gallons or less which was installed prior to July 1, 1975, if such container is equipped by July 1, 1976 with a permanent submerged fill pipe.

C. The transfer of gasoline into any stationary storage container in existence prior to July 1, 1975 which is served by a delivery vessel exempted by the Air Pollution Control Officer pursuant to Section 3(a) of this Rule, if such container is equipped by July 1, 1976 with a permanent submerged fill pipe.

D. The transfer of gasoline into any stationary storage container which the Air Pollution Control Officer finds is equipped with equipment to control emissions at least as effectively as required by this Section.

E. The transfer of gasoline into any stationary storage container in existence prior to July 1, 1975 which is equipped with an offset fill pipe.

2. No person shall store gasoline in or otherwise use or operate any gasoline delivery vessel unless such vessel is designed and maintained to be vapor tight. Any delivery vessel into which gasoline vapors have been transferred shall be refilled only at a loading facility that is equipped with a system that prevents at least 90 percent by weight of the gasoline vapors displaced from entering the atmosphere.

3. (a) The owner of operator of any bulk loading facility not subject to the provisions of Rule 412 which was in operation on or before July 1, 1975, and for which the annual throughput to stationary storage containers that are not exempted by Sections 1(b)(A) and 1(b)(B) does not exceed 500,000 gallons, may petition the Air Pollution Control Officer to have the facility's delivery vessels and other independently owned gasoline delivery vessels which are exclusively serviced at such facility exempted from the provisions of Section 2. The owner or operator of such a facility must petition annually to renew such exemptions.

   (b) A person shall not load gasoline into any delivery vessel from any loading facility granted an exemption pursuant to Section 3(a) of this Rule unless, by July 1, 1976, such delivery vessel is loaded through a submerged fill pipe.

   (c) A person shall not operate any gasoline loading facility which is not subject to the provisions of Rule 412 after July 1, 1976 unless

      A. The facility is equipped with a system or systems to prevent the release to the atmosphere of at least 90 percent by weight of the gasoline vapors displaced during the filling of the facility's stationary storage containers; and

      B. The facility is equipped with a pressure-vacuum valve on the above ground stationary storage containers with a minimum pressure valve setting of 15 ounces, provided that such setting will not exceed the container's maximum pressure rating.

4. (a) The owner or operator of any stationary storage container or gasoline loading facility which is subject to this Rule and which is installed or constructed on or after July 1, 1975 shall comply with the provisions of this Rule at the time of installation.

5. (a) The owner or operator of any stationary storage container subject to this Rule or gasoline loading facility granted an exemption pursuant to Section 3a of this Rule which is operating or in the process of being installed or constructed prior to July 1, 1975 shall comply with the provisions of this Rule by July 1, 1976, and shall comply with the the following schedule:

      A. By November 1, 1975 - Apply for an authority to construct from the Air Pollution Control Officer for the installation of the needed control system;

B. By January 1, 1976 - Submit to the Air Pollution Control Officer evidence that all necessary contracts for the design, procurement, and installation of the required emission control system have been negotiated and signed, or evidence that orders for the purchase of component parts necessary to accomplish the necessary emissions control have been issued;

C. By March 1, 1976 - Initiate on-site construction or installation of emissions control equipment.

D. By June 1, 1976 - Complete on-site construction or installation of emission control equipment; and

E. By July 1, 1976 - Secure the Air Pollution Control Officer's approval of all equipment and a permit to operate.

6. (a) Any gasoline loading facility not granted an exemption pursuant to Section 3(a) of this Rule and non-exempt accounts served by such facility shall comply with the provisions of this Rule by January 1, 1977, and shall comply with the following schedule:

A. By May 1, 1976 - Apply for an authority to construct from the Air Pollution Control Officer for the installation of the needed control system;

B. By June 1, 1976 - Submit to the Air Pollution Control Officer evidence that all necessary contracts for the design, procurement, and installation of the required emissions control systems have been negotiated and signed, or evidence that orders for the purchase of component parts necessary to accomplish the necessary emission control have been issued;

C. By September 1, 1976 - Initiate on-site construction or installation of emission control equipment;

D. By December 1, 1976 - Complete on-site construction or installation of emissions control equipment; and

E. By January 1, 1977 - Secure the Air Pollution Control Officer's approval of all equipment and a permit to operate.

7. Vapor-return and/or vapor recovery systems used to comply with the provisions of this Rule shall comply with all safety, fire, weights and measures, and other applicable codes and/or regulations.

8. (a) For the purposes of this Rule, the term "gasoline" is defined as any petroleum distillate having a Reid vapor pressure of 4 pounds or greater.

(b) For the purposes of this Rule "gasoline vapors' means the organic compounds in the displaced vapors including any entrained liquid gasoline.

(c) For the purposes of this Rule, the term "submerged fill pipe" is defined as any fill pipe, the discharge opening of which is entirely submerged when the liquid level is 6 inches above the bottom of the container. "Submerged fill pipe" when applied to a container which is loaded from the side is defined as any fill pipe the discharge opening of which is entirely submerged when the liquid level is 18 inches above the bottom of the container. (Revised August 12, 1975)

RULE 411.2 Transfer of Gasoline into Vehicle Fuel Tanks

1. A person shall not transfer or permit the transfer of gasoline from a stationary storage container subject to the provisions of Section 1 of Rule A into any motor vehicle fuel tank with a capacity of greater than 5 gallons unless such transfer is made in a manner by which the emissions to the atmosphere of the gasoline vapors displaced during filling of the vehicle fuel tank are reduced by at least 90 percent by weight.

2. Any gasoline dispensing system subject to this Rule, installed on or after July 1, 1975 shall comply with the provisions of this Rule at the time of installation.

3. (a) Any gasoline dispensing system subject to this Rule, installed or in the process of being installed prior to July 1, 1975 shall comply with the provisions of this Rule by July 1, 1976 and the owner or operator of such system shall comply with the following schedule:

   A. By November 1, 1975- Apply for an authority to construct from the Air Pollution Control Officer for the installation of the needed control system;

   B. By January 1, 1976 - Submit to the Air Pollution Control Officer evidence that all necessary contracts for the design, procurement, and installation of the required emissions control systems have been negotiated and signed, or evidence that orders for the purchase of component parts necessary to accomplish the necessary emission control have been issued;

   C. By March 1, 1976 - Initiate on-site construction or installation of emission control equipment;

   D. By June 1, 1976 - Complete on-site construction or installation of emission control equipment; and

   E. By July 1, 1976 - Secure the Air Pollution Control Officer's approval of all equipment and a permit to operate.

4. Gasoline dispensing equipment used to comply with the provisions of this Rule shall comply with all applicable safety, fire, weights and measures, and other applicable codes and/or regulations.

5. (a) For the purposes of this Rule, the term "gasoline: is defined as any petroleum distillate having a Reid vapor pressure of 4 pounds or greater.

   (b) For the purposes of this Rule "motor vehicle" is defined as any vehicle registered with the California Department of Motor Vehicles.(Revised 8/12/7

RULE 412 Organic Liquid Loading A person shall not load organic liquids having a vapor pressure of 1.5 pounds per square inch absolute or greater under actual loading conditions into any tank truck, trailer, or railroad tank car from any loading facility unless the loading facility is equipped with a vapor collection and disposal system or its equivalent approved by the Air Pollution Control Officer.

Loading shall be accomplished in such a manner that all displaced vapor and air will be vented only to the vapor collection system. Measures shall be taken to prevent liquid drainage from the loading device when it is not in use or to accomplish complete drainage before the loading device is disconnected. The vapor disposal portion of vapor collection and disposal system shall consist of one of the following:

a. An absorber system or condensation system which processes all vapors and recovers at least 90 percent by weight of the organic vapors and gases from the equipment begin controlled.

b. A vapor handling system which directs all vapors to a fuel gas system.

c. Other equipment of an efficiency equal to or greater than (a) or (b) if approved by the Air Pollution Control Officer.

This rule shall apply only to the loading of organic liquids having a vapor pressure of 1.5 pounds per square inch or greater under actual loading conditions at a facility from which at least 20,000 gallons of such organic liquids are loaded in any one day.

"Loading Facility" for the purpose of this rule, shall mean any aggregation or combination of organic liquid loading equipment which is both (1) possessed by one person, and (2) located so that all the organic liquid loading outlets for such aggregation or combination of loading equipment can be encompassed within any circle of 300 feet in diameter.

RULE 413 Effluent Oil Water Separators A person shall not use any compartment of any vessel or device operated for the recovery of oil from effluent water which recovers 200 gallons a day or more of any petroleum products from any equipment which processes, refines, stores, or handles hydrocarbons with a Reid vapor pressure of 0.5 pounds or greater, unless such compartment is equipped with one of the following vapor loss control devices, except when gauging or sampling is taking place:

a. A solid cover with all openings sealed and totally enclosing the liquid contents of that compartment.

b. A floating pontoon or double deck type cover, equipped with closure seals, to enclose any space between the cover's edge and compartment wall.

c. A vapor recovery system which reduces the emission of all hydrocarbon vapors and gases into the atmosphere by at least 90 percent by weight.

d. Other equipment of an efficiency equal to or greater than (a), (b), or (c) if approved by the Air Pollution Control Officer.

This Rule shall not apply to any oil effluent water separator used exclusively in conjunction with the production of crude oil, if the water fraction of the oil water effluent entering the separator contains less than 5 parts per million hydrogen sulfide, organic sulfides, or a combination thereof.

RULE 414 Reduction of Animal Matter A person shall not operate or use any article, machine, equipment or other contrivance for the reduction of animal matter unless all gases, vapors and gas-entrained effluents from such an article, machine, equipment or other contrivance are:

a. Incinerated at temperatures of not less than 1200 degrees Fahrenheit for a period of not less than 0.3 seconds, or

b. Processed in such a manner determined by the Air Pollution Control Officer to be equally, or more, effective for the purpose of air pollution control than (a) above.

A person incinerating or processing gases, vapors or gas-entrained effluents pursuant to this rule shall provide, properly install and maintain in calibration, in good working order and in operation devices, as specified in the authority to construct or permit to operate or as specified by the Air Pollution Control Officer, for indicating temperature, pressure, or other operating conditions.

The provisions of this rule shall not apply to any article, machine, equipment or other contrivance used exclusively for the processing of food for human consumption.

RULE 415 Open Burning No person shall burn any refuse or other material in an open outdoor fire within the boundaries of the San Joaquin County Air Pollution Control District.

RULE 416 Exceptions The exceptions to the Open Burning Rule 415 are as follows:

a. When such fire is set or permission for such fire is given in the performance of the official duty of any public officer, and such fire in the opinion of such officer is necessary for the purpose of the prevention of a fire hazard which cannot be abated by any other means, or for the instruction of *volunteer firemen*, public or industrial employees in methods of fire fighting.

b. Safety flares for the combustion of waste gases.

c. Fires used only for cooking of food for human beings.

d. When the material to be burned is residential rubbish and originates on and is being burned on premises not served by an organized solid waste disposal service, or available to a disposal site.

e. Backfires or other fire control methods used for the purpose of controlling an existing wild fire.

SHASTA COUNTY AIR
POLLUTION CONTROL DISTRICT OF
THE STATE OF CALIFORNIA

Rule 3:3. Hydrocarbons - Loading Facilities: Subsequent to August 1, 1971, a person shall not load gasoline into any tank truck or trailer from any loading facility unless such loading facility is equipped with a vapor collection and disposal system or its equivalent, properly installed, in good working order and in operation.

When loading is effected through the hatches of a tank truck or trailer with a loading arm equipped with a vapor collecting adaptor, a pneumatic, hydraulic or other mechanical means shall be provided to force a vapor-tight seal between the adaptor and the hatch. A means shall be provided to prevent liquid gasoline drainage from the loading device when it is removed from the hatch of any tank truck or trailer, or to accomplish complete drainage before such removal.

When loading is effected through means other than hatches, all loading and vapor lines shall be equipped with fittings which make vapor-tight connections and which close automatically when disconnected.

The vapor disposal portion of the system shall consist of one of the following:

a. A vapor-liquid absorber system with a minimum recovery efficiency of 90 per cent by weight of all the hydrocarbon vapors and gases entering such disposal system.

b. A variable vapor space tank, compressor, and fuel gas system of sufficient capacity to receive all hydrocarbon vapors and gases displaced from the tank trucks and trailers being loaded.

c. Other equipment of at least 90 per cent efficiency, provided such equipment is submitted to and approved by the Control Officer.

This rule shall not apply to the loading of gasoline into tank trucks and trailers from any loading facility from which not more than 10,000 gallons of gasoline are loaded in any one day.

Rule 3:4. Industrial Use of Organic Solvents:

a. A person shall not discharge more than 15 pounds of organic solvents into the atmosphere in any one week from any article, machine, equipment or other contrivance in which any organic solvent or any material containing organic solvent comes into contact with flame or is baked, heat cured or heat-polymerized, in the presence of oxygen at temperatures above 400°F., unless all organic solvents discharged from such article, machine, equipment or other contrivance have been reduced either by at least 85 per cent over-all or to not more than 15 pounds in any one week.

b. A person shall not discharge more than 40 pounds of photochemically reactive solvents into the atmosphere in any one week from any article, machine, equipment or other contrivance used under conditions other than described in section a, for employing, applying, evaporating, or drying any photochemically reactive solvent, as defined in Rule 1:2, or material containing such solvent, unless all photochemically reactive solvents discharged from such article, machine, equipment or other contrivance have been reduced either by at least 85 per cent over-all or to not more than 40 pounds in any one week.

The provisions of this rule shall not apply to:

1. The spraying or other employment of insecticides, pesticides or herbicides.
2. The employment, application, evaporation, or drying of saturated halogenated hydrocarbons or perchloroethylene.

Whenever any organic solvent or any constituent of an organic solvent may be classified from its chemical structure into more than one of the above groups of organic compounds, it shall be considered as a member of the most reactive chemical groups, that is, the groups having the least allowable per cent of the total of solvents.

c. No person shall discharge from any device, contrivance or machine more than forty (40) pounds per day of any photochemically reactive substance other than those described in a and b above unless such discharge is controlled to reduce emissions by 85%. (Amended 10/1/73)

Rule 3:5. Agricultural Uses: Discharges created in the course of applying agricultural materials in strict compliance with a permit issued by the County Agricultural Commissioner are not violations of these regulations.

Rule 3:6. Circumvention: No person shall build, erect, install or use any article, machine, equipment or other contrivance, the use of which, without resulting in a reduction in the total release of air contaminants to the atmosphere, reduces or conceals an emission which would otherwise constitute a violation.

SOUTHERN CALIFORNIA AIR POLLUTION
CONTROL DISTRICT OF THE
STATE OF CALIFORNIA

SOUTHERN CALIFORNIA AIR POLLUTION CONTROL DISTRICT

Rule 461 Gasoline Transfer and Dispensing
(adopted 1-9-76)

(a) Gasoline Transfer Into Stationary Storage Containers

(1) A person shall not transfer or permit the transfer of gasoline from any tank truck, trailer or railroad tank car into any stationary storage container with a capacity of more than 950 liters (251 gallons) unless such container is equipped with a permanent submerged fill pipe and unless 90 percent by weight of the gasoline vapors displaced during the filling of the stationary storage container are prevented from being released to the atmosphere.

(2) The provisions of Section (a)(1) shall be met by either:

(A) The displaced gasoline vapors being processed by a system that includes:

(i) A vapor-tight gasoline fill connector.

(ii) A vapor-tight vapor return line to the delivery vessel of at least 7.6 centimeters (3 inches) nominal diameter.

(iii) A device approved by the Air Pollution Control Officer which will ensure that the vapor return line is connected before gasoline can be transferred into the container.

(iv) The vapor-laden delivery vessel shall be designed and maintained to be in a vapor-tight condition.

(v) The vapor-laden delivery vessel shall be refilled only at facilities equipped with vapor collection and disposal systems as required by Rule 462.

(B) The displaced gasoline vapors and gases are processed by a system approved by the Air Pollution Control Officer and with a minimum recovery efficiency at least equivalent to that of the system described above; or

(C) Transfer is made to a storage container equipped as described in Rule 463.

(b) Gasoline Transfer into Vehicle Fuel Tanks

(1) A person shall not transfer or permit the transfer of gasoline from a stationary container subject to the provisions of Section (a) into any motor vehicle fuel tank of greater that 19 liters (5 gallons) capacity unless 90% by weight of gasoline vapors displaced during the transfer are prevented from entering the atmosphere. The transfer shall be made through a fill nozzle which:

(A) Is designed and operated to prevent the discharge of gasoline vapors to the atmosphere from the vehicle filler neck and the fill nozzle, and

(B) Is designed and operated to prevent fuel tank overfills and spillage on fill nozzle disconnect, and

(C) Limits the fill rate to a maximum of 30 liters (7.9 gallons) per minute.

(c) Exemptions

The provisions of this rule shall not apply to the transfer of gasoline:

(1) Into or from any stationary container having a capacity of 7,570 liters (2,000 gallons) or less which was installed prior to March 5, 1975, if such container is equipped with a permanent submerged fill pipe by March 1, 1977, or into or from any underground storage container installed prior to March 5, 1975, where the fill line between the fill connection and container is offset.

(2) Into or from any stationary container which is used primarily for the fueling of implements of husbandry, as such vehicles are defined in Division 16 (Section 36000, et seq.) of the California Vehicle Code, if such container is equipped with a submerged fill pipe by March 1, 1977.

(3) Into or from any stationary container located in the Southeast Desert Air Basin portion of San Bernardino County, the Joshua Tree area, or the Palo Verde area, if such container is equipped with a permanent submerged fill pipe by March 1, 1977, or at the time of container installation if after that date.

(4) Into a motor vehicle from any stationary storage container having a capacity of 950 liters (251 gallons) or less, or from any mobile container used exclusively for refueling of vehicles or aircraft.

(5) Into motor vehicles from any gasoline dispensing facility in existence prior to March 5, 1975, which is located in a structure where the dispensers are at a lower elevation than the bottom of the gasoline storage containers.

(6) Into or from any stationary container installed or under construction prior to January 9, 1976, and located in Riverside or San Bernardino County which is exclusively receiving gasoline from any loading facility which is exempted under the provisions of Section (b)(2) of Rule 462, if such container is equipped with a permanent submerged fill pipe by March 1, 1977.

(d) Other Provisions

(1) A person shall not install any gasoline storage container with a capacity of more that 950 liters (251 gallons) unless such container meets the provisions of this rule.

(2) Vapor return or vapor recovery systems used to comply with the provisions of this rule shall comply with all safety, fire, weights and measures, and other applicable codes or regulations. All fill nozzles, pressure-vacuum relief vents and any vacuum-assisted vapor recovery system must be of a type approved for the purpose by a fire and safety testing organization recognized by the fire department having jurisdiction.

(e) Definitions

For purposes of this rule, the following definitions are included:

(1) "Gasoline vapors" means the organic compounds in the displaced vapors including any entrained liquid gasoline.

(2) A "motor vehicle" is any self-propelled vehicle registered for use on the highways.

(f) Effective Dates

(1) The owner or operator of any stationary storage container or gasoline dispensing facility subject to this rule and which is installed or constructed on or after January 9, 1976, shall comply with the provisions or this rule at the time of installation.

(2) The owner or operator of any stationary storage or gasoline dispensing facility subject to this rule which is operating or in the process of being installed or constructed before January 9, 1976, shall comply with the following schedule of increments of progress:

		SECTION A (TRANSFER INTO STORAGE CONTAINERS)				
Located in County of	Tank Cap. (gal.)	Submit(1)	Negotiate(2)	Initiate(3)	Complete(4)	Assure(5)
Los Angeles	6,000 or larger	9-15-74	11-15-74	12-1-74	4-1-75	5-1-75
	less than 6,000	1-6-75	4-1-75	6-1-75	2-1-76	5-1-76
Orange	All	9-1-75	11-1-75	12-1-75	6-1-76	7-1-76
Riverside	All	9-1-75	11-1-75	3-1-76	5-1-76	6-1-76
San Bernardino	6,000 or larger	1-1-75	2-15-75	4-1-75	7-1-75	8-1-75
	less than 6,000	8-1-75	11-1-75	12-31-75	2-1-76	5-1-76

		SECTION B (DISPENSING INTO VEHICLES)				
Located in County of	Tank Cap. (gal.)	Submit(1)	Negotiate(2)	Initiate(3)	Complete(4)	Assure(5)
Los Angeles	6,000 or larger	1-6-75	3-1-75	5-1-75	9-1-76	11-1-76
	less than 6,000	6-1-75	11-1-75	10-1-76	1-1-77	3-1-77
Orange	All	9-1-75	11-1-75	2-1-76	10-1-76	12-1-76
Riverside	All	9-1-75	11-1-75	3-1-76	1-2-77	2-1-77
San Bernardino	6,000 or larger	1-1-75	2-15-75	4-1-75	1-1-77	2-1-77
	less than 6,000	8-1-75	11-1-75	1-2-76	2-1-77	3-1-77

(1) Submit to the Air Pollution Control Officer a final control plan which describes at a minimum the steps that will be taken by the source to achieve compliance with the provisions of this Rule.

(2) Negotiate and sign all necessary contracts for emission control systems, or issue orders for the purchase of component parts to accomplish emission control.

(3) Initiate on-site construction or installation of emission control equipment.

(4) Complete on-site construction or installation of emission control equipment.

(5) Assure final compliance with the provisions of this Rule.

SOUTHERN CALIFORNIA AIR POLLUTION CONTROL DISTRICT

Rule 462 Organic Liquid Loading
(adopted 1-9-76)

(a) Facilities Handling 75,700 liters (20,000 gallons) Per Day or More

(1) A person shall not load organic liquids having a vapor pressure of 77.5 milimeters of mercury (1.5 psia) or greater under actual loading conditions into any tank truck, trailer or railroad tank car from any loading facility having a throughput of 75,700 liters (20,000 gallons) or more in any one day, unless the loading facility is equipped with a vapor collection and disposal system or its equivalent approved by the Air Pollution Control Officer.

(2) Loading shall be accomplished in such a manner that the displaced vapor and air will be vented only to the vapor collection system. Measures shall be taken to prevent liquid drainage from the loading device when it is not in use or to accomplish complete drainage before the loading device is disconnected.

(3) The vapor disposal portion of the vapor collection and disposal system shall consist of one of the following:

(A) An absorber system or condensation system which processes the displaced vapor and recovers at least 90 percent by weight of the organic vapors and gases from the equipment being controlled.

(B) A vapor handling system which directs the displaced vapors to a fuel gas system.

(C) Other equipment of an efficiency equal to or greater than (A) or (B) if approved by the Air Pollution Control Officer.

(b) Facilities Handling Less Than 75,700 liters (20,000 gallons) Per Day

(1) Any facility that was in operation prior to January 9, 1976, that distributes 1,892,500 liters (500,000 gallons) or more of gasoline annually to storage vessels not exempted under Sections (c)(1), (c)(2), and (c)(3) of Rule 461, but less than a total of 75,700 liters (20,000 gallons) of gasoline in any one day shall return the vapors displaced from the delivery vessel back to the stationary storage container.

(2) Any facility in operation prior to January 9, 1976, that distributes less than 75,700 liters (20,000 gallons) of gasoline in any one day shall be exempt from the provisions of this rule provided that:

(A) Less than 1,892,500 liters (500,000 gallons) per year are distributed to storage vessels, not exempted under Sections (c)(1), (c)(2), and (c)(3) of Rule 461;

(B) All gasoline is loaded into transport vessels through a fill pipe, the discharge opening of which is submerged when the liquid level is 8 centimeters (3.15 inches) above the bottom of the vessel;

(C) The owner or operator of the facility petitions the Air Pollution Control Officer annually for this exemption.

(3) Any such facility constructed or installed on or after January 9, 1976, irrespective of throughput, shall comply with the provisions of Section (b)(1) and shall not be eligible for the exemption in Section (b)(2).

(c) Effective Dates

(1) The owner or operator of any organic liquid loading facility subject to this rule which is installed or constructed on or after January 9, 1976, shall comply with the provisions of this rule at the time of installation.

(2) The owner or operator of any organic liquid loading facility subject to this rule which is operating or in the process of being installed or constructed before January 9, 1976, shall comply with the provisions of this rule by August 1, 1976, and shall comply with the following increments of progress:

(1) By April 1, 1976, submit to the Air Pollution Control Officer a final control plan which describes, as a minimum, the steps that will be taken to achieve compliance with the provisions of this rule.

(2) By May 1, 1976, negotiate and sign all necessary contracts for emission control systems, or issue orders for the purchase of component parts to accomplish emission control.

(3) By June 1, 1976, initiate on-site construction or installation of emission control equipment.

(4) By July 1, 1976, complete on-site construction or installation of emission control equipment.

(5) By August 1, 1976, assure final compliance with the provisions of this rule.

SOUTHERN CALIFORNIA AIR POLLUTION CONTROL DISTRICT

Rule 463 **Storage or Petroleum Products**
(adopted 1-9-76)

(a) A person shall not place, store or hold in any stationary tank, reservoir or other container of more than 150,000 liters (39,630 gallons) capacity any gasoline or any petroleum distillate having a vapor pressure of 77.5 mm Hg (1.5 psi) absolute or greater under actual storage conditions, unless such tank, reservoir or other container is a pressure tank maintaining working pressures sufficient at all times to prevent hydrocarbon vapor or gas loss to the atmosphere or is designed and equipped with one of the following vapor loss control devices, properly installed, in good working order and in operation:

(1) A floating roof, consisting of a pontoon-type of double-deck type roof, resting on the surface of the liquid contents and equipped with a closure seal, or seals, to close the space between the roof edge and tank wall. The control equipment provided for in this paragraph shall not be used if the gasoline or petroleum distillate has a vapor pressure of 569 mm Hg (11 psi) absolute or greater under actual storage conditions. All tank gauging and sampling devices shall be gas-tight except when gauging or sampling is taking place.

(2) A vapor recovery system, consisting of a vapor gathering system capable of collecting the hydrocarbon vapors and gases discharged and a vapor disposal system capable of processing such hydrocarbon vapors and gases so as to prevent their emission to the atmosphere and with all tank gauging and sampling devices gas-tight except when gauging or sampling is taking place.

(3) Other equipment of equal efficiency, provided an application for such equipment is submitted and approved by the Air Pollution Control Officer.

(b) A person shall not place, store or hold in any above-ground stationary tank, reservoir or other container of 150,000 liters (39,630 gallons) or less capacity any gasoline unless such tank is equipped with a pressure-vacuum valve with a minimum pressure setting of 48.3 mm Hg (15 ounces) but not to exceed the container's maximum working pressure rating. This requirement shall not apply to any container of 7,570 liters (2,000 gallons) or less capacity installed and in service prior to January 9, 1976, nor to any container of 950 liters (251 gallons) or less capacity installed on or after January 9, 1976.

(c) Effective Dates

(1) The owner or operator of any container subject to this rule which is installed on or after January 9, 1976, shall comply with the provisions of this rule at the time of installation.

(2) The owner or operator of any container subject to this rule which is operating or in the process of being installed or constructed before January 9, 1976, shall comply with the provisions of this rule by August 1, 1976, and shall comply with the following increments of progress:

(1) By April 1, 1976, submit to the Air Pollution Control Officer a final control plan which describes, as a minimum, the steps that will be taken to achieve compliance with the provisions of this rule.

(2) By May 1, 1976, negotiate and sign all necessary contracts for emission control systems, or issue orders for the purchase of component parts to accomplish emission control.

(3) By June 1, 1976, initiate on-site construction or installation of emission control equipment.

(4) By July 1, 1976, complete on-site construction or installation of emission control equipment.

(5) By August 1, 1976, assure final compliance with the provisions of this rule.

APPENDIX B

TECHNICAL REPORT DATA SHEETS
(EPA FORM 2220-1) FOR RACT CATEGORIES
PUBLISHED AS OF JANUARY 1978

TECHNICAL REPORT DATA

(Please read Instructions on the reverse before completing)

1. REPORT NO. EPA-450/2-77-008

2.

3. RECIPIENT'S ACCESSION NO.

4. TITLE AND SUBTITLE
Control of Volatile Organic Emissions from Existing
Stationary Sources-Volume II: Surface Coating of Cars,
Coils, Paper, Fabric, Automobiles & Light Duty Trucks

5. REPORT DATE May 1977

6. PERFORMING ORGANIZATION CODE

7. AUTHOR(S)

8. PERFORMING ORGANIZATION REPORT NO. OAQPS No. 1.2-073

9. PERFORMING ORGANIZATION NAME AND ADDRESS
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15. SUPPLEMENTARY NOTES

16. ABSTRACT

This report provides the necessary guidance for development of regulations to limit emissions of volatile organic sources (VOC) of hydrocarbons, especially from the coating operations of five industries: can, coil, paper, fabric and automobile and light duty trucks. This guidance includes an emission limit which represents Reasonably Available Control Technology (RACT) for each of the five, analytical techniques for determining the solvent content of coatings, EPA's policy on the control of VOC, and a monograph on how these components can be used to develop a State regulation.

17. KEY WORDS AND DOCUMENT ANALYSIS

a. DESCRIPTORS	b. IDENTIFIERS/OPEN ENDED TERMS	c. COSATI Field/Group
Air Pollution Can, Coil, Paper, Fabric, Automobile and Light Duty Truck Industries Solvent Substitution Emission Limits Regulatory Guidance	Air Pollution Control Stationary Sources Organic Vapors	

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4. TITLE AND SUBTITLE Control of Volatile Organic Emissions from Existing Stationary Sources - Volume III: The Surface Coating of Metal Furniture

5. REPORT DATE December 1977

6. PERFORMING ORGANIZATION CODE

7. AUTHOR(S)

8. PERFORMING ORGANIZATION REPORT NO. OAQPS No. 1.2-086

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14. SPONSORING AGENCY CODE

15. SUPPLEMENTARY NOTES

16. ABSTRACT

This report provides the necessary guidance for development of regulations to limit volatile organic compound (VOC) emissions from the coating operations of metal furniture industry. This guidance includesan emission limit which represents Reasonably Available Control Technology (RACT), methods by which RACT can be achieved, and monitoring and enforcement aspects.

17. KEY WORDS AND DOCUMENT ANALYSIS

a. DESCRIPTORS	b. IDENTIFIERS/OPEN ENDED TERMS	c. COSATI Field/Group
Air Pollution	Air Pollution Control	
VOC Emission Limits	Stationary Sources	
Metal Furniture Industry	Organic Vapors	
Regulatory Guidance		

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7. AUTHOR(S)		8. PERFORMING ORGANIZATION REPORT NO. OAQPS No. 1.2.087
9. PERFORMING ORGANIZATION NAME AND ADDRESS U.S. Environmental Protection Agency Office of Air and Waste Management Office of Air Quality Planning and Standards Research Triangle Park, North Carolina 27711		10. PROGRAM ELEMENT NO. 11. CONTRACT/GRANT NO.
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15. SUPPLEMENTARY NOTES		

16. ABSTRACT

This report provides guidance for development of regulations to limit emissions of volatile organic compounds from magnet wire coating operations. Coating operations and control technology are described. Reasonably Available Control Technology (RACT) is described for the industry.

17. KEY WORDS AND DOCUMENT ANALYSIS

a. DESCRIPTORS	b. IDENTIFIERS/OPEN ENDED TERMS	c. COSATI Field/Group
Air Pollution Magnet Wire Wire Enameling Emission Limits	Air Pollution Control Stationary Sources Organic Vapors	

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4. TITLE AND SUBTITLE Control of Volatile Organic Emissions from Existing Stationary Sources - Volume V: Surface Coating of Large Appliances		**5. REPORT DATE**
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7. AUTHOR(S)		**8. PERFORMING ORGANIZATION REPORT NO.** OAQPS No. 1.2-088
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15. SUPPLEMENTARY NOTES

16. ABSTRACT

This document provides the necessary guidance for development of regulations to limit emissions of volatile organic compounds (VOC) from the coating operations of the large appliance industry. This guidance includes an emission limit which represents Reasonably Available Control Technology (RACT) for the large appliance industry, describes the industry, show the methods by which VOC emissions can be reduced in this industry and describes the monitoring and enforcement aspects.

17. KEY WORDS AND DOCUMENT ANALYSIS

a. DESCRIPTORS	b. IDENTIFIERS/OPEN ENDED TERMS	c. COSATI Field/Group
Air Pollution Large Appliance Industry Volatile Organic Compound Emission Limits Regulatory Guidance	Air Pollution Control Stationary Sources Organic Vapors	

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3. RECIPIENT'S ACCESSION NO.

4. TITLE AND SUBTITLE
Control of Volatile Organic Emissions From
Storage of Petroleum Liquids in Fixed Roof Tanks

5. REPORT DATE
December, 1977

6. PERFORMING ORGANIZATION CODE

7. AUTHOR(S)
Richard K. Burr, ESED
Kerri C. Brothers, ESED
Robert Quaney, SASD

8. PERFORMING ORGANIZATION REPORT NO.
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9. PERFORMING ORGANIZATION NAME AND ADDRESS
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15. SUPPLEMENTARY NOTES

16. ABSTRACT

This report provides the necessary guidance for development of regulations limiting emissions of volatile organic compounds (VOC) from the storage of petroleum liquids in fixed roof tanks. Reasonably available control technology (RACT) is defined in this document; cost analysis for RACT is included for evaluating the cost effectiveness of controlling fixed roof storage tank sources.

17. KEY WORDS AND DOCUMENT ANALYSIS

a. DESCRIPTORS	b. IDENTIFIERS/OPEN ENDED TERMS	c. COSATI Field/Group
Air Pollution Storage Tanks Regulatory Guidance	Air pollution control Stationary sources Organic vapors	

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4. TITLE AND SUBTITLE Control of Volatile Organic Emissions From Bulk Gasoline Plants		5. REPORT DATE December, 1977
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7. AUTHOR(S) Stephen A. Shedd, ESED Neil Efird, SASD		8. PERFORMING ORGANIZATION REPORT NO. OAQPS No. 1.2-085
9. PERFORMING ORGANIZATION NAME AND ADDRESS U.S. Environmental Protection Agency Office of Air and Waste Management Office of Air Quality Planning and Standards Research Triangle Park, North Carolina 27711		10. PROGRAM ELEMENT NO.
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15. SUPPLEMENTARY NOTES		

16. ABSTRACT

This report provides the necessary guidance for development of regulations to limit emissions of volatile organic compounds (VOC) from gasoline bulk plants. This guidance includes emission estimates, costs, environmental effects and enforcement; for the development of reasonable available control technology (RACT).

17. KEY WORDS AND DOCUMENT ANALYSIS

a. DESCRIPTORS	b. IDENTIFIERS/OPEN ENDED TERMS	c. COSATI Field/Group
Air Pollution Regulatory Guidance Gasoline Loading Vapor Balancing	Air Pollution Control Stationary Sources Organic Vapors	

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3. RECIPIENT'S ACCESSION NO.

4. TITLE AND SUBTITLE
Control of Volatile Organic Emissions from Solvent Metal Cleaning

5. REPORT DATE
November 1977

6. PERFORMING ORGANIZATION CODE

7. AUTHOR(S)
John C. Bollinger*
Jeffrey L. Shumaker, ESED

8. PERFORMING ORGANIZATION REPORT NO.
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9. PERFORMING ORGANIZATION NAME AND ADDRESS
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15. SUPPLEMENTARY NOTES
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16. ABSTRACT

This report provides the necessary guidance to control emissions of volatile organic compounds (VOC) from solvent metal cleaning operations. Emissions are characterized and reasonably available control technology (RACT) is defined for each of the three major categories of solvent metal cleaners: cold cleaners, open top vapor degreasers, and conveyorized degreasers. Information on the cost of control, environmental impact and enforcement issues is also included.

17. KEY WORDS AND DOCUMENT ANALYSIS

a. DESCRIPTORS	b. IDENTIFIERS/OPEN ENDED TERMS	c. COSATI Field/Group
Air Pollution Solvent Metal Cleaning (Degreasing) Emissions and Controls Regulatory Guidance	Air Pollution Controls Stationary Sources Organic Vapors Degreasing	

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4. TITLE AND SUBTITLE Control of Volatile Organic Compounds From Use of Cutback Asphalt		5. REPORT DATE
		6. PERFORMING ORGANIZATION CODE
7. AUTHOR(S) David W. Markwordt, ESED Frank Bunyard, SASD		8. PERFORMING ORGANIZATION REPORT NO. OAQPS 1.2-090
9. PERFORMING ORGANIZATION NAME AND ADDRESS Environmental Protection Agency Office of Air and Waste Management Office of Air Quality Planning and Standards Research Triangle Park, North Carolina 27711		10. PROGRAM ELEMENT NO.
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		14. SPONSORING AGENCY CODE 200/04

15. SUPPLEMENTARY NOTES

16. ABSTRACT

This document addresses the control of volatile organic compounds (VOC) from paving asphalts liquefield with petroleum distillate. The recommended control technology consists of the substitution of emulsions for cutback asphalt.

17. KEY WORDS AND DOCUMENT ANALYSIS

a. DESCRIPTORS	b. IDENTIFIERS/OPEN ENDED TERMS	c. COSATI Field/Group
Air Pollution Asphalt Cutback Emulsified Asphalt Regulatory Guidance	Air Pollution Control Stationary Sources Organic Vapors	

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7. AUTHOR(S) Kent C. Hustvedt, ESED Robert A. Quaney, SASD		8. PERFORMING ORGANIZATION REPORT NO. OAQPS No. 1.2-081
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15. SUPPLEMENTARY NOTES		

16. ABSTRACT

This report provides the necessary guidance for development of regulations to limit emissions of volatile organic compounds (VOC) from refinery vacuum producing systems, wastewater separators and process unit turnarounds. This guidance includes equipment specifications for vacuum producing systems and wastewater separators, and operating procedures for process unit turnarounds, all of which represent reasonably available control technology (RACT). An example cost analysis for evaluating the cost effectiveness of these refinery controls is also presented.

17. KEY WORDS AND DOCUMENT ANALYSIS

a. DESCRIPTORS	b. IDENTIFIERS/OPEN ENDED TERMS	c. COSATI Field/Group
Air Pollution Control Equipment Hydrocarbons Petroleum Refining Vacuum Producing Systems Wastewater Separators Process Unit Turnaround	Air Pollution Control Stationary Sources Hydrocarbon Emission Control	13 B 14 B 07 C 13 H

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4. TITLE AND SUBTITLE Control of Hydrocarbons From Tank Truck Gasoline Loading Terminals		5. REPORT DATE October, 1977
		6. PERFORMING ORGANIZATION CODE
7. AUTHOR(S) William Polglase, ESED Winton Kelly, ESED John Pratapas, SASD		8. PERFORMING ORGANIZATION REPORT NO OAQPS No. 1.2-082
9. PERFORMING ORGANIZATION NAME AND ADDRESS U.S. Environmental Protection Agency Office of Air and Waste Management Office of Air Quality Planning and Standards Research Triangle Park, North Carolina 27711		10. PROGRAM ELEMENT NO.
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15. SUPPLEMENTARY NOTES

16. ABSTRACT

This report provides the necessary guidance for development of regulations to limit emissions of volatile organic sources (VOC) of hydrocarbons from tank truck gasoline loading operations. This guidance includes an emission limit which represents reasonable available control technology (RACT), an analytical technique for determining the emissions from control equipment, and cost analysis for evaluating cost effectiveness of tank truck gasoline loading terminal controls.

17. KEY WORDS AND DOCUMENT ANALYSIS

a. DESCRIPTORS	b. IDENTIFIERS/OPEN ENDED TERMS	c. COSATI Field/Group
Air Pollution Tank Truck Gasoline Loading Operations Emission Limits Regulatory Guidance	Air Pollution Control Stationary Sources Organic Vapors	

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